PERSONALITY TRAITS, PERSONALITY DISORDER DIMENSIONS, AND PHYSICAL HEALTH: THE PREDICTIVE ABILITY OF SELF AND INFORMANT REPORTS

A Dissertation

by

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ABSTRACT

There is compelling evidence that personality is linked to disease and health-related behaviors. There is also emerging research which suggests that personality disorders (PDs) are related to health. Most assessments of normal and disordered personality rely on self-reported information, yet self reports offer only a single perspective on personality and personality pathology and may be limited by individuals' insight ability and motivation. As such, informant reports offer an important second perspective on personality and PDs.

In the current study, I analyzed self and informant reports of normal personality and PDs, and their respective abilities to predict physical health outcomes in a representative community sample of adults (N = 1,449) approaching later life (initially aged 55-65 years old). Using a series of hierarchical binary logistic and linear multiple regression equations, I found that both informant-reported personality and PDs can add significant variance above self reports of normal personality. Informant reports did not outperform self reports, nor did disordered personality outperform normal personality as hypothesized; rather, each added unique variance. This suggests that, above self reports of normal personality, informant reports and disordered personality are important components in the study of personality-health relationships.

DEDICATION

I would like to dedicate this dissertation to my parents, Daniel L. Cooper, M.A., and Katherine A. Cooper, M.S.W., for always believing in and supporting me throughout my life. Thank you.

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NOMENCLATURE

C-DIS-4	Computerized Diagnostic Interview Schedule for DSM-IV
DSM-IV-TR	*Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.)
FFM	Five-factor Model
MAPP	Multisource Assessment of Personality Pathology
NEO-PI-R	Revised NEO Personality Inventory
PD / PDs	Personality Disorder / Personality Disorders
SPAN	St. Louis Personality and Aging Network

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CHAPTER I

INTRODUCTION

As Allport (1937) famously stated, "personality is something and personality does something" (p. 48). What does personality do? Personality affects (and is affected by) one's happiness and subjective well-being, physical health and longevity, mental health, interpersonal relationships, and occupational success (see Ozer & Benet-Martinez, 2006). Further, personality predicts "mortality, divorce, and occupational attainment" as well as socioeconomic status and cognitive abilities (Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007, p. 313). Put simply, personality has power (Roberts et al., 2007). The purpose of the proposed study is to analyze the potential power of personality to predict the presence of physical health outcomes in community-dwelling adults nearing later life using self- and informant-reported information. I will begin by analyzing the history and current status of health and personality research, focusing on the roles of normal and disordered personality, and then finish by investigating the strengths and limitations of using self- and informant-reported information in the assessment of personality, focusing on how self- and informant-reports of personality may differentially predict health.

A Brief History of Personality and Physical Health

The notion that an individual's mental makeup can influence his or her health has a long and rich history (see Ackerknecht, 1982; Suls & Rittenhouse, 1987), perhaps being "as old as medicine itself" (Alexander, French, & Pollock, 1968, p. 3). One of the

earliest models that included both personality and disease was Hippocrates' theory of the "four humors" (black bile, yellow bile, phlegm, and blood; e.g., Stelmack & Stalikas, 1991). Each humor was associated with a personality style (temperament), which in turn was later thought to render one susceptible to temperament-specific diseases: "Depression was caused by the melancholy temperament (once associated with the humor black bile), mania by the choleric temperament (yellow bile), psychosis (*Narrheit*) by the sanguine temperament (blood), and dementia by the phlegmatic temperament (phlegm)" (Shorter, 1992, p. 15).

Later conceptualizations of the personality-health relationship can be attributed to the concept of hysteria and the psychoanalytic theories of Freud. Alexander et al. (1968), for example, outlined seven psychosomatic diseases (bronchial asthma, rheumatoid arthritis, ulcerative colitis, essential hypertension, neurodermatitis, and thyrotoxicosis), each of which was hypothesized to have a specific psychological predisposition due to dynamic unconscious conflicts or unmet needs. Alexander et al. (1968) did not go so far as to say that these illnesses were caused solely by the psyche, but did assert that psychological factors were a moving force in their development. Likewise, Dunbar (1948) thought that fractures and accidents, cardiovascular diseases, rheumatic diseases, and diabetes were psychogenic in nature. These disorders were not understood as purely physical ailments, but as disorders whose etiological roots were in some way psychological.

Modern conceptualizations of the personality-health relationship can best be attributed to the influential study by M. Friedman and Rosenman (1959), which first

made the connection between personality and coronary heart disease. Their study first described the influential conceptualization of the "Type A" behavior pattern in men, which they described as "an intense, sustained drive for achievement … continually involved in competition and deadlines" (M. Friedman & Rosenman, 1959, p. 1286). Among Type A individuals, the authors found that almost seven times the individuals had signs of coronary heart disease as compared to the more lax Types B and C behavior patterns, and concluded that the behaviors associated with the Type A personality were "largely responsible" for the increased incidence of heart disease (M. Friedman & Rosenman, 1959, p. 1295). This landmark study helped to establish the important link between personality and its power to affect one's physical health.

How personality may affect health. Personality can potentially affect health in a number of ways (see Friedman & Booth-Kewley, 1987). Contrada, Cather, and O'Leary (1999) categorized the various potential personality-health pathways into two broad domains: psychophysiological and behavioral. Similar to Cannon's (1929) "fight or flight" response and Selye's (e.g., 1946) "general adaptation syndrome," both of which theorize how the body reacts to intense stimuli, the psychophysiological pathways are primarily activated by one's life stress, which can be caused by strong emotional experiences (e.g., extreme fear or anger) or situational factors (e.g., chronic financial hardship). Stress can, in turn, suppress immune system responses, thus rendering one more susceptible to disease (see Glaser & Kiecolt-Glaser, 2005; Segerstrom & G. E. Miller, 2004) and even potentially leading to certain diseases (Cohen, Janicki-Deverts, & G. E. Miller, 2007).

Personality can affect physical health via the psychophysiological pathways because "certain personality styles encourage the appraisal of situations as more stressful" (Suls & Rittenhouse, 1990, p. 42). A neurotic individual, for example, may experience everyday occurrences as stressful or worry to the point of becoming stressed, whereas an emotionally stable individual may experience little emotional reactivity, even to the same events. Additionally, Type A individuals, due to their hostile and cynical style, may experience more intense and more frequent stressful episodes than other individuals. These simple psychophysiological examples highlight how one's personality can affect one's health via stress-induced decreases in immune system responses, leading in turn to increased susceptibility to disease.

In contrast to the psychophysiological pathways, the behavioral pathways cover any overt actions which adversely affect one's health or protect one from disease. As will be mentioned later, certain behaviors may lead to the development of diseases (e.g., diabetes due to overeating and lung cancer due to smoking tobacco products), or result in one's death (e.g., being thrown from a car during an accident due to not wearing a seatbelt). Other behaviors can be salubrious (e.g., adhering to a physician's instructions or taking precautionary vaccines). Behavioral pathways can also indirectly affect health by the actions one takes (or does not take) in the treatment of a disorder. Not adhering to a physician's instructions, for example, would be a behavioral pathway example of the personality-health relationship.

Personality is also associated with the behavioral pathways. A cautious individual, for example, would be less likely to engage in risky behavior than an

impulsive, excitement-seeking individual; a compliant individual would more likely keep up his or her prescribed exercise regimen than a noncompliant individual; and a self-disciplined individual would more likely adhere to a healthy diet and sleep schedule than an individual lacking in self-discipline. Here again, these simple examples highlight how one's personality can affect one's health.

There is also the potential for a biological third variable which affects both personality and disease (Friedman & Booth-Kewley, 1987): "For example, if a hyper-responsive nervous system is an underlying factor in the development of an anxious personality and if a hyper-responsive nervous system is an underlying factor in the development of heart disease," then the nervous system gives rise to both personality and disease (Friedman & Booth-Kewley, 1987, p. 540). In cases such as these, personality does not necessarily cause disease. Instead, the personality-disease relationship exists because of some shared underlying force.

It should not be discounted that, instead of one's personality influencing disease, disease could influence one's personality (Friedman & Booth-Kewley, 1987). Seriously ill individuals, for example, might (rightfully) become depressed about their current state, irritable due to pain, anxious about an upcoming procedure, and even angry and resentful at their current situation. Changes such as these would result in an increase in the broad personality trait of neuroticism (to be discussed later), so the causal directions of the personality-health relationships could be bi-directional or even reversed. Indeed, there are even some diseases in which personality and behavior change can be characteristic. For example, personality change is an early sign of Alzheimer's (Petry,

Cummings, Hill, & Shapira, 1988), often preceding a clinical diagnosis (Balsis, Carpenter, & Storandt, 2005).

Finally, it is likely that all of these processes are in some way involved in the personality-disease relationship: Although one's personality may render one more susceptible to disease via stress and emotional distress, one's personality may also be involved in the behavioral pathways that could lead to disease through health-damaging behaviors or protect from disease by health-promoting behaviors; personality and disease could arise from similar physiological systems; and the presence of disease could potentially affect one's personality. Although the various pathways that link personality to disease can be simple (e.g., correctly taking a prescribed medication) or complex (e.g., the suppression of immune system responses by stress or intense emotional experiences), the power of personality in one's physical health is evident.

Disease versus somatization. Before proceeding, one integral division that needs to be made is between the concepts of somatization and disease. Somatization, by definition, implies that there is no known underlying biological cause that fully explains an individual's expressed symptoms (American Psychiatric Association, 2000). Instead, these imitative manifestations are better understood as "psychological distress in the form of physical symptoms" (Lipowski, 1988, p. 1359). Disease, conversely, gives rise to symptoms which have a biological cause. In the current study, I am interested only in disease entities with a known biological underpinning.

The Five-factor Model of Personality

With the establishment that personality can affect one's physical health, it becomes necessary to define "personality" and describe its measurement. This section will be devoted to the description and measurement of "normal" personality, or the set of personality characteristics that are commonly found among average individuals. Specifically, the focus will be on one prominent model of personality, the five-factor model (FFM) of personality. To capture the full spectrum of personality, however, focus must also be given to the extreme, abnormal, pathological, or "disordered" variants of personality—the topic of discussion in a later section.

The FFM is a structural model of personality that was developed by factor-analyzing responses to items that are based on terms taken everyday language to form broad personality traits. (Factor analysis is a data reduction technique that tests whether there are latent factors that might explain the correlations among variables. Personality traits can be defined as patterns of thought, behavior, and emotion that are generally consistent across time and situations.) The theory behind the decision to use a lexical base for personality structure is that the "*individual differences that are most salient and socially relevant in people's lives will eventually become encoded into their language; the more important such a difference, the more likely is it to become expressed as a single word*" (italics in original; John, Angleitner, & Ostendorf, 1988). Five-factor model proponents argue that one's lexicon should contain the building blocks for delineating an adequate taxonomy of personality.

Like with personality-health research, the FFM of personality has a rich history (Digman, 1990; Goldberg, 1993; John, 1990), dating back to the early 1920's (see John, Angleitner, & Ostendorf, 1988). In one notable paper, Allport and Odbert (1936) culled from an unabridged English dictionary all terms that they thought were descriptive of personality traits or emotional states—the final list was close to 18,000 words. The personality-like terms were then reduced further by researchers (e.g., Cattell, 1943). After analyzing the ratings, similar five-factor solutions consistently emerged across multiple studies and raters (e.g., Fiske, 1949; Tupes & Christal, 1961), leading many to assert that five roughly orthogonal (i.e., mostly uncorrelated) factors adequately capture the structure of personality (see Digman, 1990; Goldberg, 1990; Norman, 1963). Debate, however, remains regarding the universality of the FFM and the number of factors needed to describe the structure of personality. Some researchers strongly advocate for the structure of the FFM as a "human universal" (McCrae & Costa, 1997), while others suggest that only four of the five factors consistently emerge across cultures (Triandis & Suh, 2002). Furthermore, there is emerging research which asserts that a sixth factor is needed (see Ashton & Lee, 2007). In short, consensus has not yet been reached regarding the number of factors needed to adequately and universally describe personality, but a large body of research has used the FFM as a basis.

There are slight disagreements about what to name each factor, but the five factors that comprise the FFM are generally referred to as neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Each factor represents a dimension ranging from low to high, in which most individuals score near the middle

and fewer score at the extremes. Neuroticism corresponds to the general tendency to experience negative emotions versus be emotionally stable; extraversion corresponds to a dimension in which one either enjoys social activity and positive emotions, or is reserved and introverted; openness corresponds to intellect, culture (or lack thereof), and openness versus closedness to new experiences; agreeableness corresponds to a dimension along which one tends to be agreeable and prosocial versus antagonistic; and conscientiousness corresponds to a dimension along which one tends to be self-controlled, willful, and responsible or disinhibited and irresponsible. In one widely-used measure of the FFM, the Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992a), each factor is further divided into groups of related traits referred to as facets—six facets per factor.

For many researchers, these five factors represent the basic structure of personality. The FFM, however, is not without its critics. Block (1995), for example, warns against the FFM's atheoretical basis, its near-exclusive reliance on factor analytic techniques to explicate the "structure" of personality, and its lexical foundation. Pervin (1994) questions personality trait theory in general and believes that adopting the FFM as the basic structure of personality is premature (see also Waller & Ben-Porath, 1987). And Waller and Ben-Porath (1987) state that the repeated emergence of five similar factors is testament only to the model's reliability, not its validity. Despite these criticisms, the FFM remains a widely-used taxonomy of personality; perhaps the most widely-used model of "normal" personality today (e.g., John, Naumann, & Soto, 2008,

show that usage of the FFM in published literature has increased steadily since the mid-1980's, and now dwarfs the "competition").

The Five-factor Model of Personality and Health

Many variables have been used in the study of normal personality and health, but the majority of recent research uses aspects covered by the FFM. There are both strengths and weaknesses to using the FFM in health research (Smith & Williams, 1992). On one hand, the FFM factors are very broad and may hide important lower-level associations. As will be discussed later, the facet including hostility is thought to be an important variable for the prediction and course of coronary heart disease. Analyses performed at the factor level of neuroticism may mask the predictive ability of hostility by including other, potentially unrelated facets. On the other hand, the FFM has the potential to bring together and organize disparate variables in health-related research (Marshall, Wortman, Vickers, Kusulas, & Hervig, 1994; Smith, 2006). A variety of other personality-like variables have been used in the analysis of personality-health relationships, such as hardiness (e.g., Kobasa, 1979; Kobasa, Maddi, & Kahn, 1982), optimism (e.g., Scheier & Carver, 1985), pessimistic explanatory style (e.g., Peterson, Seligman, & Vaillant, 1988), and emotional suppression (see Scheier & Bridges, 1995); the FFM "could bring order to an unwieldy proliferation of constructs and scales" in personality-health research (Smith, 2006, p. 230) and establish a unified system for analyzing the influence of personality on physical health.

At least three of the five factors have a direct relationship with aspects of physical health or health-related behaviors. The direction of their relationships with

health may change, depending on which end of each distribution is in question. The high end of a FFM trait, for example, may have a positive relationship with protective health behaviors, whereas the low end of the same trait may have a positive relationship with disease. Hence, there are potentially 10 units of analysis in FFM-health research (i.e., high and low trait levels for each of the five FFM traits).

For high neuroticism, there is debate regarding whether or not the trait is associated with true physical health problems or simply the reporting or exaggerating of physical health problems. Costa and McCrae (1987), for example, state that neuroticism's "bark" is worse than its "bite," implying that high neuroticism creates noise but no real signal. And Watson and Pennebaker (1989) refer to the negative affective component aspect of neuroticism as a mere "nuisance factor" in health research (p. 234), implying that high neuroticism affects one's perceived and reported, but not actual physical health. Both Costa and McCrae (1987) and Watson and Pennebaker (1989) assert that high neuroticism / negative affectivity is predictive only of somatic complaints—not associated with true physical disorders.

More recent research has questioned the assertions that neuroticism's effects on health are purely perceived, and has concluded that high neuroticism does, in fact, have real health implications. Charles, Gatz, Kato, and Pedersen (2008) have shown that high neuroticism is predictive of self-reported physical health disorders 25 years later; Goodwin and Friedman (2006) found that individuals with a variety of self-reported physical health problems scored significantly higher on neuroticism for many disorders than their healthy counterparts; Suls and Bunde (2005) suggested in their review that

general negative affectivity may be a predictor of coronary heart disease; and Lahey (2009) concluded in his review that high neuroticism is associated with a variety of public health issues, stating, "it appears that neuroticism is a robust predictor of future physical health problems and mortality" (p. 245). Low neuroticism, or emotional stability, conversely, may have a protective effect on health, with emotional stability potentially resulting in less perceived life stress.

Extraversion and openness seem to play less of a role in physical health than neuroticism. Although there are some physical disorders for which disordered individuals score lower than their healthy counterparts on both extraversion and openness (Goodwin & Friedman, 2006), most other studies have found no significant relationships between extraversion and openness, and health. However, high extraversion is positively correlated with social support (Swickert, Rosentreter, Hittner, & Mushrush, 2002), which in turn is "reliably related to lower rates of morbidity and mortality" (Uchino, 2006, p. 377) and may act as a buffer against life stress (Cohen & Willis, 1985). Therefore, high extraversion could emerge as a protective factor of health. Low extraversion, or introversion, conversely, could be associated with less social support, which could be related to higher rates of morbidity and mortality.

For agreeableness, there is research which suggests that facets of this factor such as hostility (hostility is a facet of agreeableness in some conceptualizations of the FFM) are important predictors of physical health (T. Q. Miller, Smith, Turner, Guijarro, & Hallet, 1996), perhaps the aspect of the Type A personality that is most associated with coronary heart disease. Therefore, low agreeableness (disagreeableness / high hostility)

could emerge as an important predictor of health and health behaviors (Booth-Kewley & Vickers, 1994).

Lastly, conscientiousness has emerged as a robust predictor of health and longevity. Indeed, Friedman (2000) referred to conscientiousness as "the most important predictor of health" (p. 1099). Individuals high in conscientiousness engage in fewer negative health-related behaviors, such as using tobacco products, drinking alcohol to excess, using illegal drugs, engaging in risky sexual behaviors, driving recklessly, and eating unhealthily (Bogg & Roberts, 2004). Individuals with a variety of medical disorders scored lower on conscientiousness than their non-disordered counterparts (Goodwin & Friedman, 2006). High conscientiousness is associated with positive health behaviors (Booth-Kewley & Vickers, 1994). Further, individuals high in conscientiousness would probably be more health-conscious: more likely to make and attend doctor's appointments, more likely to adhere to prescribed food and exercise regimens, and more likely to plan for long-term health than individuals low in conscientiousness (Booth-Kewley & Vickers, 1994).

Personality and subjective health. Self-rated, or "subjective" health is usually assessed by asking respondents to rate how healthy they believe that they are, often as compared to one's peers. Subjective health ratings have been linked to personality traits via significant correlations with each of the FFM factors (Powers & Oltmanns, 2013), and have been found to independently predict treatment-seeking (Hunt, McKenna, McEwen, Williams, & Papp, 1981), coronary heart disease (Møller, Kristensen, Hollnagel, 1996), and mortality (see Idler & Benyamini, 1997, and DeSalvo, Bloser,

Reynolds, He, & Muntner, 2006, for meta-analyses). Pinquart (2001) found that among older adults subjective health was also positively and significantly correlated with objective health, as measured via self-report (r = .44), physician-report (r = .30), and medical examination (r = .39). In short, one's subjective health rating, which is significantly associated with personality traits, can predict variance in health beyond what objective assessments of health can measure, and is another important variable to consider in the personality-health relationship.

Personality and health: Conclusions. Though the various causal pathways that connect personality to health remain somewhat unclear, there is ample evidence that one's personality can be associated with one's health. Neuroticism (negatively and seemingly through psychophysiological pathways) and conscientiousness (positively and seemingly through behavioral pathways) appear to have the largest associations with health, followed by agreeableness. Extraversion and openness do not seem to contribute much to health-related outcomes, but there is a theoretical rationale to include extraversion as a potential protective factor because of its relationship with social support.

An Overview of Personality Disorders

Up to this point, the focus has been on "normal" personality and its associations with physical health. For a complete understanding of how personality can affect health, one needs also to consider the extreme variants of personality that are not captured by normal personality inventories. Normal personality inventories are specifically designed to measure the common personality variations that can be found in the general

population; items which assess the very extreme ends of a given trait distribution would likely not be included on a personality inventory intended to measure the personalities of average individuals. As a result, personality-health analyses that rely solely on normal personality inventories may be neglecting important information.

Personality features that are at the extreme ends of distributions are usually considered to be maladaptive or dysfunctional. Introversion, for example, is a normal personality characteristic. With extreme introversion, however, one would likely be socially isolated and possibly even unable to effectively interact with others, which could lead to psychological and functional impairment. Likewise, emotional stability is usually considered to be a normal, even positive personality trait. But with extreme emotional stability, one might lack the capability to experience the expected variety of human emotions, again possibly leading to psychological dysfunction. In fact, each of the FFM factors and facets of personality could be dysfunctional if taken to the extreme.

Fortunately, items which measure the extreme, maladaptive aspects of personality exist in the form of personality disorder (PD) diagnostic criteria. Personality disorder diagnostic criteria are used to characterize and diagnose personality disorders. Personality disorders (PDs) can be thought of as collections of maladaptive personality features that have been grouped into diagnostic categories based on their clinical co-occurrences and hypothesized etiologies. Perhaps the most influential conceptualization of PD comes from the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*), which is now in its fifth edition (American Psychiatric Association, 2013). Because the data for the proposed study were collected under the previous edition—the fourth, text-

revised edition (*DSM-IV-TR*; American Psychiatric Association, 2000), I will use the *DSM-IV-TR* conceptualization of PD in the current study.

The *DSM-IV-TR* defines PD as "an enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual's culture, is pervasive and inflexible, has an onset in adolescence or early adulthood, is stable over time, and leads to distress or impairment" (American Psychiatric Association, 2000, p. 685). Individuals with personality disorders likely show signs of PD in their childhood and adolescence, but PDs cannot (formally) be diagnosed until individuals are at least 18 years old. Personality disorders are coded on Axis II of the *DSM-IV-TR* and are thought to differ from many Axis I disorders in part by their pervasive characterological nature and presumed stability across the adult lifespan (American Psychiatric Association, 2000).

The *DSM-IV-TR* outlines 10 PDs, conceptually grouped into three clusters (American Psychiatric Association, 2000). Cluster A, the odd-eccentric cluster, includes paranoid, schizoid, and schizotypal PD; Cluster B, the dramatic-emotional cluster, includes antisocial, borderline, histrionic, and narcissistic PD; and Cluster C, the anxious-fearful cluster, includes avoidant, dependent, and obsessive-compulsive PD. Paranoid PD encompasses a pattern of suspiciousness and mistrustful behavior. Schizoid PD encompasses a pattern of asocial behavior and blunted emotional expression. Schizotypal PD encompasses a pattern of eccentric thoughts and behaviors, and interpersonal discomfort. Antisocial PD encompasses a pattern of unlawful behavior and a disregard for the rights of others. Borderline PD encompasses a pattern of unstable

interpersonal relationships and dysregulated emotions. Histrionic PD encompasses a pattern of dramatic emotional expression and attention seeking. Narcissistic PD encompasses a pattern of grandiosity, need for admiration, and lack of empathy. Avoidant PD encompasses a pattern of social inhibition and feelings of inadequacy. Dependent PD encompasses a pattern of reliance on others and a need to be taken care of. And obsessive-compulsive PD encompasses a pattern of extreme orderliness and control (American Psychiatric Association, 2000).

Although the estimates vary by measure, method, source, and sample (e.g., 4.4%, Coid, Yang, Tyrer, Roberts & Ullrich, 2006; 13.4%, Torgersen, Kringlen, & Cramer, 2001), PDs most likely have a general population prevalence rate of about 9% in Western societies (Lenzenweger, Lane, Loranger, & Kessler, 2007; Samuels et al., 2002; Trull, Jahng, Tomko, Wood, & Sher, 2010). And in clinical settings, almost one-third of individuals have been found to meet the diagnostic requirements for PD (Zimmerman, Rothschild, Chelminski, 2005). Personality disorders are also associated with significant Axis I comorbidity (see Clark, 2007), treatment utilization (Bender et al., 2001), and impairment (Skodol et al., 2002), making them important diagnostic entities.

Personality disorder categories or dimensions? In the *DSM-IV-TR*, the 10 PDs are classified categorically (American Psychiatric Association, 2000). That is, each disorder is considered to be either present or absent. A PD is considered to be present when an individual meets the diagnostic threshold for a given disorder, as well as the other diagnostic requirements (e.g., clinically significant distress or impairment). The number of diagnostic criteria and the diagnostic thresholds for each disorder vary,

ranging from seven to nine diagnostic criteria per disorder, for a total of 78 unique diagnostic criteria (79 total), and a diagnostic threshold ranging from three to five diagnostic criteria per disorder. There is evidence, however, that the personality pathology is dimensional in nature (Haslam, Holland, & Kuppens, 2012; Trull & Durrett, 2005). Further, most diagnostic thresholds were established arbitrarily (see Widiger & Trull, 2007) and correspond to different levels of latent pathology (Balsis, Lowmaster, Cooper, & Benge, 2011).

When considered dimensionally, subthreshold PD diagnostic criteria combinations are far more common than PD diagnoses, with many more individuals meeting a subthreshold number of criteria for a given disorder. Subthreshold levels of PD diagnostic criteria can still be impairing (Skodol et al., 2005), and certain subthreshold combinations of PD diagnostic criteria yield as much as or more of the latent disorder trait than diagnostic combinations (Cooper & Balsis, 2009; Cooper, Balsis, & Zimmerman, 2010). Therefore, in addition to being considered to be present or absent, PDs will be considered as dimensional constructs, as measured by their respective diagnostic criteria, for the purposes of the current study.

Personality Disorder and Health

As stated at the outset of the previous section, normal personality inventories measure only the common variations of personality and do not include items that measure the extremes of personality dimensions. Given that PD features seem to exist along the extremes of normal personality dimensions (Samuel, Simms, Clark, Livesley, & Widiger, 2010), it is likely that items tapping PD-like features are too extreme to be

included on normal personality inventories. How might items that measure the extreme ends of the FFM dimensions relate to physical health? Is it possible that personality pathology is associated with physical health, potentially even beyond what the normal-range personality inventories measure or could predict? It seems plausible that the extreme and negative aspects of health (i.e., disease) would be best predicted by the extreme and negative aspects of personality (i.e., PD).

Personality disorder and health research is still in its "embryonic" stage (Frankenburg & Zanarini, 2006, p. 431), but emerging studies suggest suggests that there may be important relationships between PD and health, especially when present with comorbid Axis I disorders (Chen et al., 2009). Individuals with a PD, for example, were more likely to report having a stroke and heart disease in the general population (Moran et al., 2007). And in the same sample as Moran et al., but with older adults, three PDs (avoidant, schizoid, and obsessive-compulsive) were directly associated with coronary heart disease (Pietzrak, Wagner, & Petry, 2007).

Preliminary results are also available from a large study of personality pathology and health. Gleason, Weinstein, Balsis, and Oltmanns (in press) found that PDs were significantly predictive of heart disease, diabetes, cancer, arthritis, and a variety of other health-related outcomes. At the most basic level, disordered personality generally predicted more variance than normal personality, but nuanced analyses were not conducted. Further, the authors somehow combined self and informant reports to form composite traits, so the unique predictive ability of selves and informants is still unknown and will, in part, be the topic of the current study.

Most PDs are positively related to the factors of neuroticism and negatively related to agreeableness and conscientiousness (Saulsman & Page, 2004), each of which are in some way related to physical health, as covered above. Further, aspects of specific PDs may also be also contributing factors to physical health. Disorder-level analyses have only been undertaken for borderline PD (El-Gabalawy, Katz, & Sareen, 2010; Frankenburg & Zanarini, 2004), but have offered compelling evidence that PDs can be associated with health. Specifically, borderline PD is associated with impulsivity, suicidal behavior, and emotional dysregulation, all of which could have negative downstream health implications. And antisocial PD is associated with substance abuse, sensation seeking, and behavioral disinhibition, which could potentially lead to numerous negative health-related behaviors (Frankenburg & Zanarini, 2004) such as getting into fights and driving over the speed limit in a motor vehicle. The cynical / hostile personality characteristic (like as found in the *DSM-IV-TR* conceptualization of paranoid PD) has been also established as potential a health risk (Smith & Pope, 1990). And finally, in later adulthood, PDs are associated with an increased use of medical resources (Powers, Strube, & Oltmanns, in press), perhaps implying that individuals with personality pathology are less healthy than their non-disordered counterparts.

Personality disorder and subjective health. Powers and Oltmanns (2013), who found that the FFM personality traits are significantly correlated with subjective health, also found that certain PD traits significantly predict subjective health, even after controlling for one's physical health, number of illnesses, and "normal" personality (i.e., FFM traits). Specifically, schizoid, antisocial, and borderline PD were significant,

negative predictors of subjective health ratings, again establishing a link between PDs and physical health.

Personality, personality disorder, and health: Conclusions. Personality and personality disorders can affect health via the psychophysiological and behavioral pathways. Normal personality traits are associated with both disease and health-protective behaviors, but most "normal" personality inventories do not measure the extreme, maladaptive aspects of personality. For a fuller understanding of the personality-health analysis, the inclusion of PDs is necessary. Personality disorder and health research is in its nascent stage, but one tentative conclusion can be drawn: Specific features of PDs (e.g., recklessness and impulsivity) are likely to be negatively associated with health via destructive behaviors. Additional research is needed to determine whether other PDs are predictive of health.

Self versus Informant Reports

Just as the inclusion of PDs yields a greater breadth of personality assessment than that of normal personality inventories alone, so too does the inclusion of informant reports yield a more complete assessment of personality than that of self-reports alone. Self reports yield important and valid information, but there may be aspects of one's personality that one may be hesitant to endorse or unable to detect (Vazire, 2010). As Cooper, Balsis, and Oltmanns (2014) comment, self-reports are potentially limited by two considerations: individuals' insight and motivation. In terms of insight, individuals may lack self-awareness or have "blind spots" in their personality makeup, such that they are unaware of certain of their personality features and thus unable to report on

them. In terms of motivation, individuals may be motivated, whether purposefully or unconsciously, to present themselves in a specific manner, usually in the less pathological / more socially-desirable direction (although bias in the direction of malingering is also possible in certain circumstances).

Consistent with these assertions, Achenbach, Krukowski, Dumenci, and Ivanova (2005) concluded, from a large meta-analysis of self- and informant-reported adult psychopathology, that "people may often provide different pictures of their problems than would be obtained from informants who knew them" (p. 370). Similarly, Meyer et al. (2001) concluded from their review that using only a single method of assessment could yield "an incomplete or biased understanding" of an individual (p. 150). Given these different perspectives, the relationship between personality and health will likely vary, depending on which source one asks. Hence, the inclusion of informant reports should "round out" the assessment of one's personality by potentially gathering information that self reporters were unable or unwilling to report. The impact of using self versus informant repots in health-related research will be discussed shortly.

Agreement of self versus informant reports. With the inclusion of informant reports, the question arises of how well each perspective agrees and contributes valid information for normal and disordered personality. For normal personality, self-informant agreement is affected by many factors, including the observability of the trait or behavior in question, the trait or behavior's level of social desirability, and the level of acquaintanceship between selves and informants (John & Robins, 1993). First, traits and behaviors that are easily observable, such as "extraverted" or "talkative" tend to have

higher interjudge agreement than traits and behaviors that are not easily observable, such as "neurotic" or "anxious" (Funder & Doboroth, 1987). Second, there may be a tendency for individuals to self-enhance (Funder & Colvin, 1997; John & Robins, 1993). That is, selves may rate themselves higher on socially desirable or evaluative traits than informants, who should be less ego-involved. As John and Robins (1993) theorize, "under conditions of ego involvement self judgments may be less accurate than the judgments of a well-informed other" (p. 548) because "ego involvement may trigger affective and defensive processes that influence our self-perception" (p. 547), a position also endorsed by Vazire (2010). And third, self-informant pairs who are well acquainted tend to agree more than pairs who are not (e.g., Funder & Colvin, 1988), which underscores the importance of acquiring informants who know the target individual well.

For disordered personality, the importance of gathering informant reports has been recognized for decades (e.g., Zimmerman, Pfohl, Stangl, & Corenthal, 1986). Individuals with PDs may lack the requisite intrapersonal and interpersonal insight to self-report on their PD features (e.g., Clark, Livesley, & Morey, 1997; Grove & Tellegen, 1991; Zimmerman, 1994), or underreport personality pathology because of the social undesirability (McKeeman & Erickson, 1997; Oltmanns, Turkheimer, & Strauss, 1998) or egosyntonicity (American Psychiatric Association, 2000) of certain PD features. The presence of specific PD features could also affect one's ability or motivation to accurately report on one's own personality (see Cooper, Balsis, & Oltmanns, 2012). Finally, many of the PD criteria address socially undesirable

personality characteristics, which, due to their ego-involved nature, self reporters may be hesitant to endorse; a problem that informant reports should bypass.

For PDs, the incorporation of informant reports will likely yield additional diagnostic information that self reports do not. Zimmerman et al. (1986) found that informant reports often revealed additional personality pathology. And Cooper et al. (2012) found that for narcissistic PD, informant reporters were more sensitive to narcissistic PD features than selves, such that informants often reported certain diagnostic criteria at a lower level than selves. In other words, informants reported certain pathological features of personality before selves are able or willing to report them. Consistent with this finding, Klonsky, Oltmanns, and Turkheimer (2002) and Zimmerman (1994) reported in their reviews that there was a slight trend for informants to report more pathology than selves. However, there are other studies that have found no difference in levels of pathology reported, and others that have found that selves report more pathology than informants (e.g., Riso, Klein, Anderson, Ouimette, & Lizardi, 1994), so this conclusion is tentative. Further, this slight trend may only be evident among the PDs, and may not generalize to substance use disorders or internalizing disorders.

Given the potential limitations of self report, the self-informant agreement for normal personality is still significant, with correlations ranging from .25 to .62 between mean informant reports and self reports (McCrae & Costa, 1987). In his meta-analysis, Meyer (2002) found that the self-informant correlations for the FFM factors and facets were .44 when the informants were spouses and .31 when the informants were non-

spouse peers. The five-factor structure of the FFM also replicates for both selves and informants (see Digman, 1990), again lending support to the assertion that there is significant agreement between selves and informants. The self-informant agreement for PDs is roughly comparable, with a mean correlation ranging from .36 to .39 (Achenbach et al., 2005; Klonsky et al., 2002). But, there are many reasons to be wary of self reports alone.

There is also evidence that informant reports are at least as predictive of behaviors and outcomes as self reports. Oltmanns and Turkheimer (2006) reported that both self and informant reports identified "meaningful connections between personality problems and early separation from the military" (p. 104). Vazire and Mehl (2008) found that both self and informant reports predicted behavior, and concluded that "both the self and others possess unique insight into how a person typically behaves" (p. 1202). In an outpatient sample of adults, Ready, Watson, and Clark (2002) reported that behaviors "were predicted equally well by self-reports and informant reports" (p. 361), and concluded that both self and informant reports predicted unique variance in behavior. Kolar, Funder, and Colvin (1996) found that the best predictor of behavior might actually be the consensus of one's peers (i.e., informant reports). And Klein (2003) found that only informant reports significantly predicted social adjustment 7.5 years later. Hence, self and informant reports yield important information; both should be considered in the assessment of personality. As Vazire (2010) stated, "each perspective will have access to different types of information" (p. 283).

Self versus informant reports of personality and health. As stated previously, informant reports of personality may yield additional information or at least offer a different perspective than that of self reports. Hence, it is possible that informant reports may uniquely relate to physical health variables. At least four studies have analyzed the relationship between self and informant reports and health; specifically, heart health. Kneip et al. (1993) found that only spousal reports were related to coronary heart disease. Siegman, Townsend, Blumenthal, Sorkin, and Civelek (1998) found that spousal ratings were a more valid predictor of coronary heart disease than self reports. And Smith et al. (2007, 2008) found that spousal ratings were more related to coronary artery hardening than self-reports, and concluded that self-reports might underestimate the true personality-health relationship for coronary heart disease. As the results of these four studies suggest, informant reports may provide additional, valid information that self-reports do not. Unfortunately, no study has analyzed the relationship of informant reports to other physical disorders, so future research is needed in this area.

Literature Review Conclusions

There is compelling evidence that personality traits are linked to health; especially through neuroticism, agreeableness, and conscientiousness. Further, there is research which suggests that PDs may be related to health. Unfortunately, no study has analyzed the relationships between normal personality, personality disorder, and health, so these potential contributions remain unknown. Self reports offer only a single perspective on personality, personality pathology, and personality change, and may be limited by individuals' insight ability and motivation. Informant reports yield valid

information and offer a second, outsider's perspective on the target's personality. Emerging evidence suggests that informant reports of personality are important predictors of heart health. No study, however, has analyzed both self and informant reports of normal and disordered personality for other areas of health.

The Current Study

In the current study, I analyzed self and informant reports of normal personality, personality disorders, and their respective abilities to predict the probabilities of having certain physical health disorders. Most of the personality-health research has analyzed the associations between personality and coronary heart disease, but there is evidence to suggest that the presence of other disorders may be affected by aspects of one's personality. The purpose of the current study is to analyze the potential contributions self and informant reports of normal and disordered personality in predicting a variety of diseases in a sample of adults approaching later life (initially aged 55-65 years old).

Why study adults approaching later life? Studying adults approaching later life is important for at least two reasons. First, like adolescence, the later life period covers a time of many significant changes, such as retirement and its concurrent financial concerns, the "empty nest," declining abilities, and the death of one's parents and peers. Second, although there are many significant relationships between personality and health, the effect of these associations will likely not appear until individuals' health begins to decline with age. Coronary heart disease, for example, takes years to develop, so the association between personality and health would likely not appear in younger adults. Individuals approaching later life are a dynamic population with emerging health

concerns, and constitute an excellent sample for the study of the personality-health relationship.

CHAPTER II

METHOD

Sample Characteristics

Recruitment procedures. Participants were drawn from the St. Louis Personality and Aging Network (SPAN) study, a longitudinal epidemiological study of adults nearing later life who were recruited from the St. Louis, MO, USA metropolitan area (Oltmanns & Gleason, 2011). Potential participants were identified via listed phone numbers that could be checked against census records to determine whether there were individuals within the target ages who resided at each household. Once identified, a combination of letters and phone calls were used to recruit potential participants. Forty-three percent of the targeted individuals agreed to participate. To determine whether there was any response bias, non-responders were asked to complete a measure of the FFM of personality. Of the non-responders, 82 returned the personality measure; it was determined that the mean scores of responders and non-responders were "quite similar, if not exactly identical" (Oltmanns & Gleason, 2011, p. 158). Therefore, there was little evidence to suggest that there was sampling bias, at least on the basis of the FFM.

Individuals with a current history of psychosis and individuals who were currently struggling with a life-threatening illness were excluded from participating, as well as individuals who could not read aloud the informed consent protocol or who were planning to move out of the St. Louis metropolitan area. After reviewing initial SPAN demographics, it was found that Black men were under-represented. As a result, Black

men were over-sampled for a short period to bring their percentage up to the expected proportion in the St. Louis metropolitan area. Participants were paid $60 for the initial consultation and paperwork, and an additional $10 per follow-up assessment (Oltmanns & Gleason, 2011).

Once participants were identified and recruited, the next step was to recruit the participant-nominated informants. Participants were asked to identify "someone who knows them well and who would be able to provide [the study] with an accurate description of their personality traits;" preferably someone who lives with them (Oltmanns & Gleason, 2011, p. 159). Additionally, participants and informants must talk at least once per month and see each other in person at least once per year. These additional requirements were put in place to help ensure that that the self-informant pairs were well-acquainted.

Participant characteristics. In total, 1,449 participants had the required data for the proposed study. Just over half (55%) of the sample was female (n = 799). As stated above, participants ranged in age from 55-65 years old (M = 59.56, Mdn = 60.00, SD = 2.73). In terms of ethnicity, 67% (n = 975) self-identified as being White and 30% (n = 438) as being Black. Just under half (49%) were currently married (n = 714), 30% were separated or divorced (n = 428), 14% were never married (n = 207), and 7% were widowed (n = 100). For the highest level of education achieved, 29% had a high school diploma or equivalent (n = 415), 5% had a vocational degree (n = 77), 11% had some post-high school, pre-bachelor's education (n = 159), 26% had a bachelor's degree (n = 373), and 27% had some level of post-secondary education (n = 391). Sixty-three

percent of the participants were currently employed (*n* = 910), of whom 73% were employed full-time (n = 656). Of those who were unemployed, 57% were retired (*n* = 298), 18% were disabled (*n* = 103), 16% were unemployed but actively seeking employment, and 8% were homemakers (*n* = 67). In terms of combined household incomes, 11% of households made less than $20,000 per year, 18% made between $20,000 and $40,000 per year, 21% made between $40,000 and $60,000 per year, 13% made between $60,000 and $80,000 per year, 11% made between $80,000 and $100,000 per year, and 24% made over $100,000 per year. Although there is diversity in the sample, Oltmanns & Gleason (2011) concluded that the sample was somewhat more educated and wealthy than the St. Louis metropolitan area's general population characteristics.

Informant characteristics. The participant-nominated informants were roughly two-thirds female (68%, *n* = 991). Informant ages ranged from 16 to 92, and averaged about 55 years old (*M* = 54.95, *Mdn* = 57.00, *SD* = 11.47). In terms of ethnicity, informants were 67% White (*n* = 970) and 31% Black (*n* = 444). Sixty-one percent were married (*n* = 890), followed by 14% divorced or separated (*n* = 202), 13% never married (n = 190), 6% in a serious relationship (*n* = 84), and 5% widowed (*n* = 71). Sixty-five percent were currently employed (*n* = 938). In terms of education, 14% had a high school diploma or equivalent (*n* = 208), 29% had completed some college or had an associate's degree (*n* = 427), 23% had a bachelor's degree (*n* = 327), and 27% had an advanced degree (*n* = 400).

Participant-informant relationship characteristics. Just under half (49%) of the participant-nominated informants were spouses or romantic partners of the participants (*n* = 707). The remaining half was constituted by other family members (27%, *n* = 395); friends (22%, *n* = 314); and other individuals such as coworkers, ex-spouses, and neighbors (2%, *n* = 32). Participants reported that they had known the informants for an average of about 30 years (*M* = 31.96, *Mdn* = 32.00, *SD* = 15.15). Just over half (51%) of the participant-informant dyads were currently living with the participant (n = 734). Of the informants not currently living with the participants, 46% had lived with the participant during some point in their lives (n = 325). Just over half (54%) of the dyads saw each other at least once per day (*n* = 783), and nearly two-thirds (66%) talked to each other every day. Finally, just over half (52%) of the dyads knew each other "better than anyone else" (*n* = 752); the remaining half knew each other "very well" (42%, *n* = 605) or "fairly well" (6%, *n* = 82).

Procedure

At baseline, participants completed a three-hour battery of assessment protocols. Roughly half (54%, *n* = 769) completed the protocols in person. The other half completed the protocols on-line (45%, *n* = 628) or completed the protocols using a combination of the two methods (1%, *n* = 15). In cases where participants and informants lived together, materials were often sent home with the participant for the informant to complete; in other cases, materials were either mailed out to the informants, or informants completed the assessment protocols on-line.

Measures

Computerized Diagnostic Interview Schedule for DSM-IV (C-DIS-4). The C-DIS-4 (see Robins & Helzer, 1994, for historical development) is a computerized demographic, health status, and mental disorder diagnostic interview. Only self-reported data were collected for the C-DIS-4. The C-DIS-4 has an in-depth demographic section; modules for the assessment of depression, dysthymia, mania, hypomania, and psychosis; and also includes questions regarding participants' general health status and questions asking whether they had ever "Been under a doctor's care" for 10 specific physical health disorders. Given their theoretical link to personality and/or their relatively high frequency (i.e., greater than about 10%) in the current sample, I plan to include for analysis five of the 10 measured physical health disorders: heart disease, cancer, diabetes, arthritis, and asthma. Due to their low frequencies in the current sample and/or lack of theoretical rationale connecting them to personality variables, the other five disorders (hepatitis, stroke, tuberculosis, bleeding ulcer, and epilepsy) will not be included.

RAND-36 Health Status Inventory (HSI). The HSI (Hays, Prince-Embury, & Chen, 1998) is a 36-item self-report measure of various aspects of one's physical health and functioning. Items include a question of one's self-rated level of overall health, as well as items assessing whether one's physical health has interfered with one's usual activities. Specifically, the self-rated health question asks, "In general, would you say your health is:" followed by five weighted response options ranging from 0 (Poor) to 17 (Fair) to 46 (Good) to 79 (Very Good) to 100 (Excellent). Item weights were determined

using item response theory analyses, but for the purposes of the current analyses I will consider them as existing on a 1-5 scale. Self and informant ratings of the participant's self-rated health were gathered, and I propose to use both in the subsequent analyses.

Multisource Assessment of Personality Pathology (MAPP). The MAPP (Oltmanns & Turkheimer, 2006) is a self-report measure of the *DSM-IV-TR* PDs and was specifically designed to measure personality pathology when collecting information from multiple sources. With the exception of one *DSM-IV-TR* narcissistic PD diagnostic criterion ("is often envious of others or believes that others are envious of him or her"), which was split into two MAPP items ("I think other people are jealous of me" and "I am jealous of other people"), each item corresponds to a single *DSM-IV-TR* diagnostic criterion (American Psychiatric Association, 2000, p. 717). Each of the 80 MAPP items were developed by translating into lay language the *DSM-IV-TR* PD diagnostic criteria (Oltmanns & Turkheimer, 2006). The MAPP has good test-retest reliability (*Mdn* = .81; Okada & Oltmanns, 2009), but has limited accounts of its validity other than in the prediction of divorce (Disney, Weinstein, & Oltmanns, 2012) and early separation from the military (in Fiedler, Oltmanns, & Turkheimer, 2004, the authors used a slightly modified version of the MAPP). Internal consistency reliability estimates for the current study are presented in the Results section.

Respondents are asked to rate on a five-point scale how often each of the items is true of them. The scale ranges from 0 (*I am never like this / 0% of the time*) to 4 (*I am always like this / 100% of the time*); scores of 2 (*I am sometimes like this / 50% of the time*) and greater are considered to be diagnostic. However, scores will be kept

dimensional rather than dichotomized. Being a multisource instrument, the MAPP has two versions: A self report version and an informant report version. The only difference between the self and informant forms is that the self report form items are worded in the first person (e.g., "I prefer to do things alone") and informant report form items are worded in the third person (e.g., "He/she prefers to do things alone," depending on the gender of the person that the informant is describing).

Revised NEO Personality Inventory (NEO-PI-R). The NEO-PI-R (Costa & McCrae, 1992a) is a widely-used self-report inventory of "normal" personality from the perspective of the FFM of personality (neuroticism, extraversion, openness, agreeableness, and conscientiousness). The inventory consists of 240 items to which participants can respond on a five-point scale ranging from 0 (*Strongly disagree*) to 2 (*Neutral*) to 4 (*Strongly agree*). Like with the MAPP, the NEO-PI-R has a self report and informant report version, written in first and third person, respectively. Internal consistency reliabilities, as measured by the coefficient alpha (Cronbach, 1951), for the five factors were good and ranged from .87 (openness) to .92 (neuroticism), with a median alpha of .89. The test-rest reliability estimates over one week were also good, with a median of .92 (McCrae, Kurtz, Yamagata, & Terracciano, 2011). The validity of the NEO-PI-R is well-established (see McCrae et al., 2011). Internal consistencies for the self and informant forms as gathered in the current study are presented in the Results section.

Data Analyses

Internal consistencies, correlations, and descriptive statistics. To ascertain whether the personality scales used in the current study were reliable in terms of their internal consistencies, I analyzed the scales' coefficient alpha values (Cronbach, 1951) by source (i.e., self versus informant reports). I was also interested in the correlations between self and informant reports of disordered personality. To assess for this, I ran a series of bivariate Pearson correlations between personality disorder categories. Next, because I was interested in determining whether the personality variables differed by gender and/or race, I analyzed the descriptive statistics of the personality variables as reported by selves and informants by gender and race. To do so, I ran a series of mixed design ("split-plot") ANOVAs with the personality variables (as reported by selves and informants) as the dependent variables and gender (male or female) and race (white or black) as independent categorical factors. The results illuminated whether the personality and PD variables differed across gender and/or race, as well as returned the descriptive statistics for each variable of interest. If the descriptive statistics differed by gender and/or race, I controlled for these potential differences by including gender and race on the first steps of the main regression equations (to be discussed shortly).

I was then interested in whether the gender combinations of participants and informants affected the levels of reported personality and PD. Specifically, I ran a series of 2 × 2 ANOVAs with participants' and informants' gender as the factors, and the 15 informant-reported personality variables as the dependent variables. These analyses illuminated whether the informant-reported levels of personality and PD differed by the

informants' gender and also whether their reports varied with respect to the participants' gender. If so, I controlled for these differences by including the informants' gender and a gender match variable on the first steps of the main regression equations for the informant-reported personality variables.

Finally, I was interested in determining whether the frequencies of each physical health disorder differed by gender and race. To do so, I ran chi-squared analyses for each of the five physical health disorders. If the five physical health disorders differed by gender and/or race, I controlled for the significant variables by entering them on the first steps of the main regression equations.

Main analyses. For the first portion of the main analyses, I was interested in determining whether self and informant reports of normal and disordered personality could predict variance in the five physical health disorders. To do so, I ran a series of hierarchical binary logistic regression analyses with self- and informant-reported personality and PD variables as predictors of the five physical health disorders. Specifically, I was interested in determining how much variance could be predicted by the personality and PD variables as reported by selves and informants. In order to determine this, I used pseudo R-squared values (specifically, using the Naglekerke, 1991, method), to determine which source (self or informant reports) and which personality system (normal or disordered) best predicted variance in the five physical health disorders.

In order to determine their unique and shared variances, I analyzed the contribution of self report versus informant report by entering self-reported data for the

normal and disordered measures of personality on the second steps (the first steps being reserved for controlling gender, race, and gender match if significant), and informant-reported data for the normal and disordered measures of personality on the third steps. By determining if the third steps of the regression equations were significant, I was able to ascertain whether informant reports added variance to the overall model for each of the five physical health disorders. And to determine the reverse, the ability of self reports to add unique variance above informant reports, I next ran another series of regressions, but this time with informant reports on steps two and self reports on steps three. I hypothesized that informant reports would yield unique variance above self reports and would outperform self reports.

For the second series of logistic regression analyses, I analyzed the contributions of normal versus disordered personality by entering self- and informant-reported data for the measure of normal personality on the second steps, and self- and informant-reported data for the measure of disordered personality on the third steps of the regression equations. By determining if the third step of the regression equation was significant, I was able to determine whether PD added unique explained variance to the overall model for each of the five physical health disorders. I next ran the reverse analysis, with PD on steps two and normal personality on steps three to determine the unique variance that normal personality could add above PD. I hypothesized that disordered personality variables would yield unique variance above normal personality variables and would outperform normal personality.

Multiple regressions. Similar to the methodology for the first half of the main analyses, for the second half of the main analyses, I ran hierarchical multiple linear regression analyses using self- and informant-reported personality variables as predictors of self- and informant-rated subjective health ratings. Using R-squared values, I was able to determine which source (self or informant reports) and which personality system (normal or disordered) best predicted variance in the subjective health ratings of selves and informants. I also determined the unique and shared variances that each set of predictors added to the models.

CHAPTER III

RESULTS

Internal Consistency

Overall, the internal consistencies of the normal and disordered personality variables ranged from fair to excellent. As can be seen in Table 1, coefficient alphas for the self-reported information of normal personality (as measured by the NEO-PI-R) ranged from .87 (agreeableness) to .93 (neuroticism), with a median value of .89. Coefficient alphas for the informant-reported information of normal personality ranged from .89 (openness) to .94 (neuroticism and conscientiousness), with a median value of .93. For self-reported disordered personality (as measured by the MAPP), alphas ranged from .53 (antisocial) to .94 (paranoid), with a median value of .70. And for informant-reported disordered personality, alphas ranged from .61 (obsessive-compulsive) to .95 (paranoid), with a median value of .79. Of note is that the internal consistencies of the informant-reported information were generally slightly greater than those of the self-reported information, suggesting that informant reports were generally more reliable than self reports.

Table 1

Internal Consistency Reliability Estimates for Self- and Informant-reports of Normal and Disordered Personality

Personality Variable	Self-reported Data	Informant-reported Data
NEO-PI-R		
Neuroticism	.93	.94
Extraversion	.89	.90
Openness	.89	.89
Agreeableness	.87	.93
Conscientiousness	.89	.94
MAPP		
Paranoid	.72	.79
Schizoid	.57	.65
Schizotypal	.70	.74
Antisocial	.53	.66
Borderline	.69	.79
Histrionic	.69	.74
Narcissistic	.71	.80
Avoidant	.81	.82
Dependent	.72	.79
Obsessive-compulsive	.65	.61
Total MAPP score	.94	.95

Note. NEO-PI-R = Revised NEO Personality Inventory; MAPP = Multisource Assessment of Personality Pathology.

Disordered Personality Correlations

The correlations between the total scores of self and informant reports of PDs are presented in Table 2. As can be seen in Table 2, the correlations were all significant, small, and in the positive direction. Correlations ranged from .13 (narcissistic PD) to .27 (avoidant PD), and had a median of .23.

Table 2

Correlations between Self and Informant Reports of Disordered Personality

Disorder	*r*
Paranoid	0.26*
Schizoid	0.25*
Schizotypal	0.22*
Antisocial	0.22*
Borderline	0.26*
Histrionic	0.22*
Narcissistic	0.13*
Avoidant	0.27*
Dependent	0.24*
Obsessive-compulsive	0.19*

* $p < .001$

Descriptive Statistics and Demographic Influences on Main Variables of Interest

To restate, the purpose of the current study is to determine whether self- and informant-reported personality information can predict physical health outcomes. Because personality reports may vary by gender, race, and the gender of the informant, it is important to partial out the variance due to demographic factors so that the source of the information (self versus informant) and type of personality variable (normal versus disordered) become the main predictors of interest. In this section, I will report the means and standard deviations of the personality data by source, gender, and race. If personality varied by the main effects of race and gender, I will partial out their variances from the main analyses. Of interest to the readers of this dissertation and for the purposes of future research, I have also included self and informant reports of personality by gender and/or race. This information, while not necessary for partialling out variance for the purposes of the main analyses, illuminated how personality reports were associated with the demographic variables. These descriptive statistics are presented in Appendix A.

In order to ascertain the descriptive statistics for each of the 15 personality variables (five normal and 10 disordered), I ran a series of mixed design ("split-plot") ANOVAs, which incorporate both a between-participants (gender and race) and within-participants (self versus informant) design into a single model. I begin by reporting the descriptive statistics and main effect statistical analyses for normal personality as measured by the five factors of the FFM, by source, gender, and race. Next, I report the descriptive statistics for the 10 *DSM-IV-TR* PDs as measured by the MAPP, by source,

gender, and race. Finally, I report the descriptive statistics for each of the five physical health disorders, and conduct chi-squared analyses to determine if the frequencies reported varied by gender and race.

Because of the large number of analyses needed to test these questions, I used a Bonferroni correction. There are seven sets of analyses: three main effects (source, gender, and race), three two-way interaction effects (source × gender, source × race, and gender × race), and one three-way interaction (source × gender × race). (The two-way and three-way interactions are presented in Appendix A.) Each set of analyses contains 15 variables, for a total of 105 (15 × 7) comparisons. With the Bonferroni correction, *p* values were required to be less than .0005 for these analyses.

Personality variables. The means, standard deviations, and significances for the 15 personality variables by source, gender, and race are presented in Tables 3, 4, and 5, respectively. As can be seen in Table 3, all five of the FFM personality variables varied significantly by the source of information, though the differences were not in a consistent direction. For neuroticism, there was a source effect, such that informants reported significantly more neuroticism than selves, $F(1, 1408) = 34.63$, $p < .0005$. For extraversion, there was a source effect, such that informants reported significantly more extraversion than selves, $F(1, 1408) = 22.80$, $p < .0005$. For openness to experience, there was a source effect, such that participants rated themselves higher than informants, $F(1, 1408) = 128.64$, $p < .0005$. For agreeableness, there was a source effect, such that participants rated themselves significantly higher in agreeableness than informants, $F(1, 1408) = 72.69$, $p < .0005$. Finally, for conscientiousness, there was a source effect, such

that informants reported significantly more conscientiousness than participants, $F(1, 1408) = 40.60$, $p < .0005$.

Table 3

Personality Scores by Source

Personality Variable	Participants *M* (*SD*)	Informants *M* (*SD*)
NEO-PI-R		
Neuroticism*	73.65 (20.36)	78.69 (25.62)
Extraversion*	107.72 (18.35)	110.03 (21.31)
Openness*	111.91 (18.45)	105.86 (19.22)
Agreeableness*	129.51 (15.19)	124.31 (23.25)
Conscientiousness*	123.11 (17.42)	127.73 (25.49)
MAPP		
Paranoid*	5.03 (3.74)	6.50 (5.01)
Schizoid	7.43 (3.70)	7.34 (4.25)
Schizotypal*	4.81 (3.87)	5.59 (4.51)
Antisocial*	3.52 (2.56)	4.00 (3.50)
Borderline*	3.82 (3.51)	4.97 (4.83)
Histrionic*	5.95 (3.77)	6.56 (4.68)
Narcissistic*	6.34 (4.13)	7.57 (5.79)
Avoidant	4.44 (3.91)	4.18 (4.21)
Dependent*	2.77 (3.06)	3.55 (4.14)
Obsessive-compulsive*	9.21 (4.46)	11.00 (4.96)
Total MAPP*	53.31 (26.83)	61.26 (34.74)

Note. NEO-PI-R = Revised NEO Personality Inventory; MAPP = Multisource Assessment of Personality Pathology.

* $p \leq .0005$

Table 4

Personality Scores by Gender

Personality Variable	Males *M* (*SD*)	Females *M* (*SD*)
NEO-PI-R		
Neuroticism	74.03 (19.03)	77.86 (19.91)
Extraversion	106.79 (17.60)	110.54 (17.21)
Openness	107.02 (16.85)	110.38 (16.34)
Agreeableness*	122.64 (16.75)	130.24 (14.78)
Conscientiousness	124.45 (18.56)	126.20 (18.29)
MAPP		
Paranoid	5.88 (3.41)	5.68 (3.55)
Schizoid	7.61 (3.18)	7.19 (3.10)
Schizotypal	5.39 (3.11)	5.06 (3.40)
Antisocial*	4.23 (2.55)	3.39 (2.18)
Borderline*	4.77 (3.22)	4.10 (3.40)
Histrionic	6.33 (3.28)	6.19 (3.33)
Narcissistic*	7.49 (3.81)	6.54 (3.68)
Avoidant	4.13 (3.05)	4.46 (3.37)
Dependent	3.17 (2.83)	3.16 (2.89)
Obsessive-compulsive	10.47 (3.55)	9.84 (3.69)
Total MAPP	59.46 (22.83)	55.61 (24.55)

Note. NEO-PI-R = Revised NEO Personality Inventory; MAPP = Multisource Assessment of Personality Pathology.

* $p < .0005$

Table 5

Personality Scores by Race

Personality Variable	Whites *M* (*SD*)	Blacks *M* (*SD*)
NEO-PI-R		
Neuroticism	77.25 (20.68)	73.70 (16.73)
Extraversion	108.79 (18.48)	109.06 (15.03)
Openness*	111.09 (17.70)	103.93 (12.63)
Agreeableness*	127.81 (16.22)	124.71 (15.74)
Conscientiousness	124.65 (19.39)	127.15 (15.96)
MAPP		
Paranoid*	5.44 (3.21)	6.49 (3.97)
Schizoid*	7.08 (3.07)	8.06 (3.20)
Schizotypal	5.02 (3.07)	5.62 (3.67)
Antisocial	3.88 (2.25)	3.49 (2.65)
Borderline	4.44 (3.18)	4.31 (3.66)
Histrionic	6.38 (3.24)	5.98 (3.44)
Narcissistic	7.07 (3.57)	6.72 (4.17)
Avoidant*	4.67 (3.29)	3.53 (2.96)
Dependent*	3.42 (2.80)	2.59 (2.91)
Obsessive-compulsive	10.06 (3.65)	10.25 (3.62)
Total MAPP	57.46 (22.40)	57.03 (26.89)

Note. NEO-PI-R = Revised NEO Personality Inventory; MAPP = Multisource Assessment of Personality Pathology.

* $p < .0005$

For disordered personality, eight of the 10 PDs (all but schizoid and avoidant) differed by source, with informants reporting slightly more pathology in each case (see Table 3). For paranoid PD, there was a source effect, such that informants reported more pathology than selves, $F(1, 1408) = 77.59$, $p < .0005$. For schizotypal PD, informants reported more pathology than participants, $F(1, 1408) = 15.10$, $p < .0005$. Informants reported more pathology than participants for antisocial PD, $F(1, 1408) = 22.41$, $p < .0005$. For borderline PD, informants reported more pathology than participants, $F(1, 1408) = 53.13$, $p < .0005$. Informants reported more histrionic PD pathology than participants, $F(1, 1408) = 15.41$, $p = .0005$. For narcissistic PD, informants reported more pathology than participants, $F(1, 1408) = 43.06$, $p < .0005$. Participants reported more pathology then informants for avoidant PD, $F(1, 1408) = 7.84$, $p = .005$. For dependent PD, informants reported more pathology than participants, $F(1, 1408) = 35.96$, $p < .0005$. Finally, for obsessive-compulsive PD, informants reported more pathology than participants, $F(1, 1408) = 95.92$, $p < .0005$. For the MAPP total score, informants also reported significantly more pathology than selves.

For gender, among the normal personality variables, only agreeableness differed by gender, such that females were higher in agreeableness than males, $F(1, 1408) = 68.94$, $p < .0005$ (see Table 4). For the disordered personality variables, three of the PDs (antisocial, borderline, and narcissistic) differed by gender, with males reporting more pathology than females. For antisocial PD, there was a main effect of gender, such that males reported more pathology than females, $F(1, 1408) = 41.93$, $p < .0005$. For

borderline PD, males reported more pathology than females, $F(1, 1408) = 13.25$, $p < .0005$. For narcissistic PD, males reported more pathology than females, $F(1, 1408) = 18.81$, $p < .0005$.

For race, Whites were higher in openness than Blacks, $F(1, 1408) = 57.99$, $p < .0005$ (see Table 5). There was also a main effect of race for agreeableness, such that Whites were higher in agreeableness than Blacks, $F(1, 1408) = 12.47$, $p < .0005$. Four of the PDs (paranoid, schizoid, avoidant, and dependent) differed by race. For paranoid PD, Blacks reported more pathology than Whites, $F(1, 1408) = 27.19$, $p < .0005$. Blacks reported more schizoid PD pathology than Whites, $F(1, 1408) = 29.05$, $p < .0005$. For avoidant PD, Whites reported more pathology than Blacks, $F(1, 1408) = 36.84$, $p < .0005$. Whites reported more pathology than Blacks for dependent PD, $F(1,1408) = 23.01$, $p < .0005$.

Gender match analyses. Next, to determine whether the gender of the participant-informant match significantly affected the levels of personality and PD reported, I ran a series of 2 × 2 ANOVAs, with the 15 (five normal and 10 PDs) informant-reported personality variables as the dependent variables and the gender of participants and informants as the two factors. In short, the gender match analyses tested whether or not it mattered if the informant was a male or a female reporting on a male or a female. The results of the gender match ANOVAs revealed that the match between the gender of the informant and the gender of the participant did matter for three of the 15 disorders, as revealed by significant interaction effects.

Specifically, levels of informant-reported neuroticism were affected by the interaction of participants' and informants' gender, with female informants rating female participants significantly higher in neuroticism than male participants, $F(1, 1407) = 7.13$, $p = .007$. Levels of informant-reported schizotypal PD were also affected by the interaction of participants' and informants' gender, $F(1, 1407) = 8.02$, $p = .005$. And finally, levels of informant-reported histrionic PD were affected by the interaction of participants' and informants' gender, $F(1, 1407) = 6.82$, $p = .009$. Given that gender match was significant for some variables (and approached significance for others), I will control for its variance in the regression equations by entering it on the first steps.

Physical health disorders. The frequencies of the five physical health disorders are presented in Table 6. In the following analyses, I conducted chi-square tests for independence to determine if there were significant differences between the observed and expected frequencies of the five physical health disorders by gender and race. For the 10 chi-square analyses, I used a Bonferroni-corrected p value of .005.

For heart disease, the chi-square test revealed that gender, $\chi^2(1, N = 1412) = 5.88$, $p = .015$ and race were not related to the frequency of heart disease, $\chi^2(1, N = 1412) = 2.62$, $p = .106$. For cancer, the chi-square test revealed that both gender, $\chi^2(1, N = 1412) = 1.41$, $p = .236$, and race, $\chi^2(1, N = 1412) = 1.93$, $p = .165$, were also independent, and not related to the observed frequency of cancer. For arthritis, the chi-square test revealed that both gender, $\chi^2(1, N = 1412) = 22.93$, $p < .001$, and race, $\chi^2(1, N = 1412) = 14.14$, $p < .001$, were related to arthritis, such that women were more likely than men and Blacks were more likely than Whites to report arthritis. For asthma, the chi-square test revealed

that gender, $\chi^2(1, N = 1412) = 12.19$, $p < .001$, but not race, $\chi^2(1, N = 1412) = 3.01$, $p = .083$, was related to the reported presence of asthma, such that women were more likely to report asthma than men. And for diabetes, the chi-square test revealed that gender was not related, $\chi^2(1, N = 1412) = 2.39$, $p = .122$, but that race was related $\chi^2(1, N = 1412) = 73.35$, $p < .001$, to the reported presence of diabetes, such that Blacks were more likely to report diabetes than Whites. (See Appendix A for frequency tables by race and gender.)

Table 6

Frequencies of Physical Health Disorders

Been under a doctor's care for:	*n* (%)
Heart disease	171 (12%)
Cancer	178 (13%)
Arthritis	349 (25%)
Asthma	166 (12%)
Diabetes	235 (17%)

Subjective health ratings. Participants and informants also rated the quality of the participants' health. This rating, referred to as "self-rated" or "subjective" health is a one-item measure of a person's overall perceived health, and was posed to respondents by asking, "In general, would you say your (or his/her) health is:" As might be expected, the scores from participants and informants are significantly correlated $r(1230) = .55$, p

< .0001. But as can be seen from Table 7, informants rated participants' overall health worse than participants rated their own health, $t(1229) = 13.50$, $p < .001$, suggesting that participants viewed themselves as healthier than their informants viewed them. I next ran a mixed design ("split-plot") ANOVA to determine if there were any significant effects for gender or race. There were no significant gender effects; but subjective health did differ by race, with Blacks ($M = 3.04$, $SD = .89$) reporting lower health ratings than Whites ($M = 3.69$, $SD = .91$), $F(1, 1226) = 128.02$, $p < .001$.

Table 7

Subjective Health Ratings from the Perspectives of Selves and Informants

Subjective Health	Participants *n* (%)	Informants *n* (%)
1 (Poor)	29 (2%)	70 (6%)
2 (Fair)	184 (13%)	220 (18%)
3 (Good)	369 (26%)	396 (32%)
4 (Very good)	476 (34%)	385 (31%)
5 (Excellent)	345 (25%)	165 (13%)
M (*SD*)*	3.68 (1.06)	3.29 (1.08)

* $p < .001$

Personality, demographics, and physical health: Conclusions. Although the effect sizes were small, many of the 15 personality variables varied by race and/or gender. A few of the informant-reported personality variables also differed, according to

the informants' gender. Furthermore, the prevalence of many of the physical health disorders varied by gender and/or race. As a result, I will partial out theses variances by entering gender, race, and the informants' gender on the first steps of the appropriate main analyses. Doing so will ensure that gender and race are not accounting for the associations among the personality and health variables.

Main Analyses: Logistic Regressions

For the first portion of the main analyses, I ran a series of hierarchical binary logistic regressions to determine whether personality variables can predict variance in the presence of reported physical health disorders. Because the prediction of disease is important, I did not use a Bonferroni correction for the logistic regression analyses. There are situations in which one would want a highly stringent critical value for evaluating significance (e.g., to determine whether a very risky procedure is effective for the treatment of a relatively benign disease), and there are situations others in which one would prefer to err on the side of being liberal (e.g., to determine whether a relatively safe procedure is effective for the identification of a rapidly progressing, deadly disease). Without a Bonferroni correction, I was more likely to have false positives, but was also more likely to detect potentially important associations between personality variables and reported physical health disorders.

Self versus informant. In the first series of regressions, I entered gender, race, and informants' gender as a block on the first step of each regression equation in order to partial out any variance that they might contribute to predicting the physical health disorders. Next, I entered the 15 self-reported personality variables (the five FFM factors

as measured by the NEO-PI-R and the 10 *DSM-IV-TR* PDs as measured by the MAPP) on the second step of each logistic regression equation. On the third steps of each equation, I entered the informant-reported version of each of the 15 personality variables. The summaries of the results are presented in Table 8. Overall logistic regression tables are presented in Appendix B.

Table 8

Hierarchical Logistic Regression Summary with Self Then Informant Reports Predicting Physical Health Disorders

Heart Disease					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	8.786	3	.012*	.012*
2	Self reports	33.552	15	.057*	.045*
3	Informant reports	16.331	15	.079*	.022
Cancer					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	4.203	3	.006	.006
2	Self reports	19.156	15	.031	.025
3	Informant reports	26.689	15	.066*	.035*
Arthritis					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	40.422	3	.042*	.042*

Table 8 Continued

Arthritis					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
2	Self reports	28.330	15	.072*	.030*
3	Informant reports	12.372	15	.084*	.012
Asthma					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	18.154	3	.025*	.025*
2	Self reports	28.734	15	.063*	.038*
3	Informant reports	10.738	15	.078*	.015
Diabetes					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	74.988	3	.086*	.086*
2	Self reports	29.341	15	.118*	.032*
3	Informant reports	28.010	15	.149*	.031*

* $p < .05$

As can be seen in Table 8, the demographics step was significant for four of the five disorders (all but cancer). Self-reports of personality were also significant for four of the five disorders (all but cancer). Informant reports of personality were significant for two of the five disorders (cancer and diabetes). I will now individually discuss the

disorders and their significant predictors. Overall models of the logistic regression equations are presented in Appendix B.

For heart disease, the demographics step was a significant, predicting just over 1% of the variance. Specifically, the gender variable was significant, with being female reducing the probability of reporting heart disease. In step two, self reports of personality were significantly predictive of heart disease, predicting another 4.5% of the variance. Step three, informant reports of personality, was not significant. From the overall model, five individual predictors were significant. Self-reported borderline and histrionic PDs were associated with an increased probability of reporting heart disease, self-reported dependent and obsessive-compulsive PDs were associated with a decreased probability of reporting heart disease, and informant-reported dependent PD was associated with an increased probability of reporting heart disease.

For cancer, the demographics variables were not significantly predictive. Step two was also non-significant. In step three, the informant reports of personality, were significant, adding 3.5% variance to the model. Self-reported borderline and informant-reported histrionic PDs were significant individual predictors, each increasing the probability of selves reporting cancer. Self-reported narcissism also emerged, but was associated with a decrease in the probability of reporting cancer.

For arthritis, the demographics step was significant, adding 4.2% predictive variance to the model. Specifically, the gender and race variables were significant, with being female increasing the probability of reporting arthritis and being White reducing the odds of reporting arthritis. Step two (self reports of personality) was also significant,

adding 3.0% predictive variance to the model, but there were no significant individual predictors. Step three (informant reports of personality) was not significant.

For asthma, the demographics step was significant, adding 2.5% variance to the model. Specifically, the gender variable was significant, with being female related to having a higher probability of reporting asthma. Step two (self reports of personality) was also significant, adding 3.8% variance to the model. Step three (informant reports of personality) was not significant. One significant individual predictor emerged, self-reported borderline PD, and was associated with an increased probability of selves reporting arthritis.

Finally, for diabetes, the demographics step was significant, adding 8.7% predictive variance to the model. Specifically, race was a significant individual predictor, with being Black increasing the risk of reporting diabetes. Step two (self reports of personality) was also significant, adding 3.2% predictive variance to the model. Step three (informant reports of personality) was also significant, adding 3.1% predictive variance to the model. Three significant individual variables emerged as predictors of diabetes: Self-reported openness, informant-reported conscientiousness, and informant-reported narcissistic PD; each was associated with decreases in the probability of selves reporting diabetes.

Informant versus self. In the previous series of analyses, I analyzed whether informant reports would add unique predictive variance above self reports. To determine how much variance self reports can uniquely predict, I next ran another series of hierarchical logistic regressions. Similar to the previous analyses, I reserved step one for

demographics (gender, race, and gender match). This time, on step two, I entered the informant reports of personality, followed by the self reports of personality on step three. Running these analyses will allow me to determine the unique and shared variance between the self and informant reports predicting the physical health disorders. Because steps one of each analysis and the individual predictors are the same as in the previous logistic regressions equations and explanations, I will not report them in the text again here. See Table 9 for the step summaries.

Table 9

Hierarchical Logistic Regression Summaries with Informant Then Self Reports Predicting Physical Health Disorders

Heart Disease					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	8.786	3	.012*	.012*
2	Informant reports	23.356	15	.043*	.031
3	Self reports	26.527	15	.079*	.036*
Cancer					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	4.203	3	.006	.006
2	Informant reports	23.513	15	.037	.025
3	Self reports	22.232	15	.066*	.029
Arthritis					

Table 9 Continued

Arthritis					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	40.422	3	.042*	.042*
2	Informant reports	19.131	15	.061*	.019
3	Self reports	21.571	15	.084*	.023
Asthma					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	18.154	3	.025*	.025*
2	Informant reports	16.501	15	.047*	.022
3	Self reports	22.970	15	.078*	.031
Diabetes					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	74.988	3	.086*	.086*
2	Informant reports	32.078	15	.122*	.036*
3	Self reports	25.273	15	.149*	.028

* $p < .05$

As can be seen in Table 9, informant reports added significant variance to diabetes, and self reports added significant variance to heart disease. For heart disease, step three (self reports of personality) was significant, adding 3.6% variance to the model. For cancer, arthritis, and asthma, steps two and three were each non-significant.

For diabetes, step two (informant reports of personality) was significant, adding 3.6% variance to the model.

Using the values from Tables 8 and 9, I could then compute the unique and shared variances between self and informant reports, the results of which are displayed in Table 10. As can be seen in Table 10, self reports of normal and disordered personality added significant unique predictive variance to heart disease. Informant reports of normal and disordered personality added significant unique predictive variance to diabetes.

Table 10

Unique and Shared Variances of Self and Informant Reports Predicting Physical Health Disorders

Disorder	Demographics	Self (Unique)	Informant (Unique)	Self and Informant (Shared)	Total
Heart disease	.012*	.035*	.021	.010	.078*
Cancer	.006	.029	.035	< .001	.066*
Arthritis	.042*	.022	.012	.007	.083*
Asthma	.025*	.031	.015	.007	.078*
Diabetes	.087*	.028	.031*	.005	.151*

* $p < .05$

Normal versus disordered. For the next series of binary logistic regressions, I sought to determine whether normal versus disordered personality was more predictive of the five physical health disorders. On the first step of each regression equation, I entered gender, race, and gender match as a block in order to partial out any variance due to demographic factors. On the second step of the regression equations, I entered the 10 normal personality variables (five self-reported and five informant-reported) and 20 disordered personality variables (10 self-reported PDs and 10 informant-reported PDs). Because steps one of each analysis and the individual predictors were the same as in the previous regression equations, I will not report them again in the text here. See Table 11 for the step summaries.

Table 11

Hierarchical Logistic Regression Summary with Normal Then Disordered Personality Predicting Physical Health Disorders

Heart Disease					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	8.786	3	.012*	.012*
2	Normal personality	12.772	10	.029	.017
3	Disordered personality	37.465	20	.079*	.050*
Cancer					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	4.203	3	.006	.006

Table 11 Continued

Cancer					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
2	Normal personality	14.038	10	.024	.018
3	Disordered personality	32.047	20	.066*	.042*
Arthritis					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	40.422	3	.042*	.042*
2	Normal personality	12.940	10	.055*	.013
3	Disordered personality	28.246	20	.084*	.029
Asthma					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	18.154	3	.025*	.025*
2	Normal personality	18.498	10	.050*	.025*
3	Disordered personality	20.982	20	.078*	.028
Diabetes					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	74.988	3	.086*	.086*
2	Normal personality	37.156	10	.127*	.041*
3	Disordered personality	19.598	20	.149*	.022

* $p < .05$

For heart disease, step two (normal personality) was not significant. Step three (disordered personality) was significant, adding 5.0% predictive variance to the model. For cancer, step two was non-significant. Step three, however, was significant, with disordered personality adding 4.2% predictive variance to the model. For arthritis, steps two (normal personality) and three (disordered personality) were both non-significant. For asthma, step two was significant, adding 2.5% predictive variance to the model. Step three was non-significant. For diabetes, step two (normal personality) was significant, adding 4.1% predictive variance to the model. Step three (disordered personality) was not significant.

Disordered versus normal. In the previous series of analyses, I analyzed whether reports of disordered personality would add unique predictive variance above reports of normal personality. To determine how much variance the normal personality variables can uniquely predict, I next ran another series of hierarchical logistic regressions. Similar to the previous analyses, I reserved step one for demographics (gender, race, and gender match). This time, on step two, I entered the reports of disordered personality, followed by the reports of normal personality on step three. Running these analyses allowed me to determine the unique and shared variance between the reports of normal and disordered personality predicting the physical health disorders. Because step ones of each analysis and the individual predictors were the same as in the previous regression equations, I will not report them again here. See Table 12 for the step summaries.

Table 12

Hierarchical Logistic Regression Summary with Disordered Then Normal Personality Predicting Physical Health Disorders

Heart Disease					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	8.786	3	.012*	.012*
2	Disordered personality	44.367	20	.071*	.059*
3	Normal personality	5.870	10	.079*	.008
Cancer					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	4.203	3	.006	.006
2	Disordered personality	38.09	20	.055*	.049*
3	Normal personality	8.046	10	.066*	.011
Arthritis					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	40.422	3	.042*	.042*
2	Disordered personality	31.722	20	.074*	.032*
3	Normal personality	9.464	10	.084*	.010
Asthma					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	18.154	3	.025*	.025*

Table 12 Continued

Asthma					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
2	Disordered personality	28.613	20	.063*	.038
3	Normal personality	10.866	10	.078*	.015
Diabetes					
Step	Predictors	χ^2	*df*	R^2	R^2 Change
1	Demographics	74.988	3	.086*	.086*
2	Disordered personality	26.696	20	.116*	.030
3	Normal personality	30.057	10	.149*	.033*

* $p < .05$

For heart disease, step two (disordered personality) was significant, adding 5.9% predictive variance to the overall model. Step three (normal personality) was not significant. For cancer, step two was significant, adding 4.9% predictive variance to the model. Step three was not significant. For arthritis, step two (disordered personality) was significant, adding 3.2% predictive variance to the model. For asthma, neither steps two nor three were significant. For diabetes, step two (disordered personality) was non-significant. Step three (normal personality) was significant, adding 3.3% predictive variance to the model.

Using the values from Tables 11 and 12, I could then compute the unique and shared variances between normal and disordered personality, the results of which are

displayed in Table 13. As can be seen in Table 13, normal personality added significant unique variance to diabetes. Disordered personality added significant unique variance to heart disease and cancer.

Follow-up Logistic Regression Analyses

In order to determine if these findings would replicate, I ran another series of hierarchical binary logistic regressions, but this time I split the sample in half and ran split analyses to double-check the results. The split analyses were often not significant, but this was due to the decreased sample size, and therefore decreased power of the split-half samples. However, the R^2 values for each step were very close in magnitude to those of the full sample analyses. Therefore, I concluded from the split-half hierarchical binary logistic regressions that the results were similar enough to the full analyses to warrant the interpretations of the full analyses.

Main Analyses: Linear Regressions

For the second half of the main analyses, I ran a series of hierarchical linear regressions, with self- and informant-reported personality predicting self- and informant-reported subjective physical health ratings. As with the hierarchical binary logistic regressions, step one was reserved for demographic information (participants' gender, participants' race, and informants' gender) to partial out any variance associated with the variables of interest.

Table 13

Unique and Shared Variances of Normal and Disordered Personality

Disorder	Demographics	Normal (Unique)	Disordered (Unique)	Normal and Disordered (Shared)	Total
Heart disease	.012*	.007	.050*	.009	.078*
Cancer	.006	.011	.042*	.007	.066*
Arthritis	.042*	.010	.029	.002	.083*
Asthma	.025*	.015	.028	.010	.078*
Diabetes	.087*	.033*	.022	.009	.151*

* $p < .05$

Personality variables predicting self-reported health. The first of the linear regressions included self reports of normal and disordered personality predicting self reports of subjective health. The first step was reserved for participants' gender and race, and informants' gender. On the second step, I either entered self-reported normal and disordered personality or informant-reported normal and disordered personality. And on the third step, I either entered informant-reported normal and disordered personality or self-reported normal and disordered personality, depending on which variables were entered in step two. Due to there being eight regression analyses, the Bonferroni-corrected *p*-value for R^2 change significance level was .00625. Table 14 contains the summaries of the results. The overall regression tables are presented in Appendix C.

Table 14

Summaries of Personality Variables Predicting Self-reported Physical Health

Set	Step	Predictors	*F* change	R^2	R^2 change
	1	Demographics	54.137	.104*	.104*
1	2	Self reports	19.169	.258*	.154*
	3	Informant reports	3.534	.286*	.028*
Set	Step	Predictors	*F* change	R^2	R^2 change
	1	Demographics	54.137	.104*	.104*
2	2	Informant reports	10.214	.201*	.097*
	3	Self reports	10.821	.286*	.085*

Table 14 Continued

Set	Step	Predictors	*F* change	R^2	R^2 change
	1	Demographics	54.137	.104*	.104*
3	2	Normal	25.504	.243*	.139*
	3	Disordered	4.101	.286*	.043*
	Step	Predictors	*F* change	R^2	R^2 change
	1	Demographics	54.137	.104*	.104*
4	2	Disordered	13.270	.249*	.145*
	3	Normal	7.063	.286*	.037*

* $p < .00625$

As can be seen in Set 1, all three steps added significant variance to the model, for a total of 28.6% of variance explained by demographic and personality variables in self-reported health ratings. For step one, race was a significant predictor of self-reported subjective health, with being White being associated with higher self-reported subjective health. Across each set, four individual predictors emerged as significant at the $p < .00625$ level: Self-reported neuroticism, self-reported schizotypal PD, self-reported borderline PD, and informant-reported dependent PD; each was associated with decreases in self-reported subjective health. Set 2 contains the results of the analyses with informant reports on the second step and self reports on the third step. All three steps were again significant. Set 3 contains the results of the analyses with normal

personality on the second step and disordered personality on the third step. As can be seen in Set 3 of Table 14, all three steps were significant.

In order to determine the unique and shared contributions of normal and disordered personality, next I ran a regression with steps two and three reversed from the last equation, with disordered personality on step two and normal personality on step three. As can be seen in Set 4, all three steps were significant. For the shared and unique variances associated with self-reported physical health, see Table 15.

Personality variables predicting informant-reported health. Next, I was interested in determining how personality variables were related to *informant-reported* subjective health ratings. Again, the first steps were reserved for participants' gender and race, and informants' gender. On the second steps, I either entered self-reported normal and disordered personality or informant-reported normal and disordered personality. And on the third steps, I either entered informant-reported normal and disordered personality or self-reported normal and disordered personality, depending on which variables were entered in step two.

Table 15

Unique and Shared Variances of Personality Variables Predicting Physical Health

	Demographics	Self (Unique)	Informant (Unique)	Self and Informant (Shared)	Total
Self-reported health	.104*	.085*	.028*	.069	.286*
Informant-reported health	.060*	.019	.109*	.071	.259*
	Demographics	Normal (Unique)	Disordered (Unique)	Normal and disordered (Shared)	
Self-reported health	.104*	.037*	.043*	.102	.286*
Informant-reported health	.060*	.047*	.031*	.121	.259*

Note. Each numeric cell represents an R^2 value.

* $p < .00625$

As can be seen in Set 1 of Table 16, all three steps added significant variance to the model for a total of 25.9% of the variance explained. For step one, race and informant gender were significant predictors of informant-reported subjective health, with being White being associated with higher informant-reported subjective health and female informants reporting lower subjective health ratings for participants. For the personality variables, two individual predictors emerged as significant: an increase in informant-reported dependent PD was associated with a decrease in informant-reported subjective health, whereas an increase in narcissistic PD was associated with an increase in informant-reported subjective health. As can be seen in Set 2, only steps one (demographics) and two (informant reports of personality) were significant.

Table 16

Summaries of Personality Variables Predicting Informant-reported Physical Health

Set	Step	Predictors	*F* change	R^2	R^2 change
	1	Demographics	26.412	.060*	.060*
1	2	Self reports	8.566	.150*	.090*
	3	Informant reports	11.709	.259*	.109*
Set	Step	Predictors	*F* change	R^2	R^2 change
	1	Demographics	26.412	.060*	.060*
2	2	Informant reports	19.135	.240*	.180*
	3	Self reports	2.028	.259*	.019

Table 16 Continued

Set	Step	Predictors	*F* change	R^2	R^2 change
	1	Demographics	35.810	.060*	.060*
3	2	Normal	26.431	.228*	.168*
	3	Disordered	2.512	.259*	.031*
	Step	Predictors	*F* change	R^2	R^2 change
	1	Demographics	26.412	.060*	.060*
4	2	Disordered	11.658	.212*	.152*
	3	Normal	7.536	.259*	.047*

* $p < .00625$

Finally, I ran two regression analyses with normal and disordered personality predicting informant-reported subjective physical health. Step one was reserved for demographic information. On step two, I first entered normal personality, followed by disordered personality on step three. Then, in the next regression equation, I entered disordered personality on step two, followed by normal personality on step three. This way, I could determine the unique and shared variances contributed to informant-reported physical health by the personality variables. As can be seen in Sets 3 and 4 of Table 16, all three steps were significant. With all of the regressions run, I could now determine the unique and shared variances that were associated with self and informant reports of personality predicting self and informant reports of physical health. These results are displayed in Table 15.

As can be seen in Table 15, self-reported personality was associated most strongly with self-reported health, explaining 8.5% of the variance. Informant reports of personality were still predictive of self-reported health, but only explained 2.8% of the variance. For informant-reported health, informant reports of personality were most strongly related, explaining 10.9% of the variance. Self reports were not significantly predictive of informant-reported health. In terms of normal and disordered personality, normal personality was associated with self- and informant-reported health, uniquely explaining 3.7% and 4.3% of the variance, respectively. Disordered personality was also significantly and uniquely predictive of self- and informant-reported personality, predicting 4.7% and 3.1% of the variance, respectively.

CHAPTER IV

SUMMARY AND CONCLUSIONS

The purpose of the current study was to determine whether self and informant reports of normal and disordered personality could predict physical health outcomes, as measured by self reports of five physical health disorders and a one-item measure of subjective overall health, as reported by selves and informants. The results suggested that personality can, indeed, predict variance in physical health outcomes. Although the effect sizes and variances predicted were often small, broad personality traits and disordered personality dimensions can predict variance in outcomes as far removed as physical health disorders and subjective health.

Two unique features of the current study were the inclusion of disordered personality and informant-reported personality in the prediction of physical health. Previously, the PD-health relationship had been studied in borderline PD (Frankenburg & Zanarini, 2004), implicated in heart disease (El-Gabalawy et al., 2010; Moran et al., 2007; Pietrzak et al., 2007), and analyzed at the broad level (Gleason et al., in press); but to this point there had been no comprehensive study on the relationships among individual personality traits, individual PDs, and health-related outcomes. Furthermore, only recently have studies begun to analyze the effect of using informant reports of personality in the prediction of physical health disorders, and the ability of informant reports to predict disorders other than heart disease was still unknown. In the current study, I sought to begin the process of filling these gaps in research.

Summary of Findings

For the five physical health disorders, self and informant reports were about as equally predictive, each with one significant physical health disorder prediction (see Table 10). Disordered personality was slightly more predictive than normal personality within the five physical health disorders, with disordered personality significantly predicting two physical health disorders compared to normal personality's one (see Table 13). Specifically, informant reports of personality were predictive of cancer and diabetes. For diabetes, the addition of informant reports approximately doubled the predictive power of personality over self reports alone. When comparing the predictive power of normal and disordered personality, disordered personality was predictive of heart disease and cancer, while self reports were not. Self-reports, however, were predictive of diabetes, while informant reports were not (see Table 13).

For subjective health ratings, self reports were more predictive of self-reported subjective health while informant reports were more predictive of informant-reported subjective health, likely due to their shared method variance. Interestingly, informant-reported personality was predictive of self-reported subjective health, but self-reported personality was not predictive of informant-reported subjective health. Therefore, informant reports slightly "won out" over self reports for the prediction of subjective physical health. Normal and disordered personality were about as equally predictive of self- and informant-reported subjective physical health.

I had hypothesized that informant reports and disordered personality would outperform self reports and normal personality in predicting health outcomes. My

hypotheses were not fully supported by the data. Instead, both were unique and roughly equal predictors of physical health. This finding highlights the importance of taking into account both informant reports of personality and disordered personality in personality-health research.

Individual Disorders

Heart disease. Self-reported borderline PD, self-reported histrionic PD, and informant-reported dependent PD emerged as significant individual predictors of heart disease, and each was associated with increases in the probability of selves reporting heart disease. Self-reported dependent and obsessive compulsive PDs were also significant predictors, but were associated with decreases in the probability of selves reporting heart disease. I expected that agreeableness would decrease the probability and neuroticism would increase the probability of selves reporting heart disease, given hostility and anger's link to heart disease in previous research (Booth-Kewley & Friedman, 1987), so their absence was surprising. The absence of neuroticism, especially, was surprising because of the connection between negative affect and heart disease (Sul & Bunde, 2005). In fact, no normal personality variables were predictive of heart disease in the current study, which highlights the importance of PDs in the prediction of heart disease in this sample.

However, these findings are somewhat at odds with previous research. Specifically, Pietrzak et al. (2007), Moran et al. (2007), and El-Gabalawy (2010) each analyzed whether PDs were associated with heart disease. Although Moran et al. and El-Gabalawy et al. found that borderline PD was associated with heart disease (similar to as

in the current study), the authors also found significant associations among four PDs that were not associated with heart disease in the current analyses. Furthermore, Pietrzak et al. found that obsessive-compulsive PD increased the odds of reporting heart disease, whereas obsessive-compulsive PD was a negative predictor of reporting heart disease in the current analyses. These inconsistencies could be due to the different methods of assessing for PD (PDs were assessed via a structured interview in these studies). But clearly, future research is needed in this area.

Cancer. Research on the link between cancer and personality hit its peak in the 1980's and 1990's, and the results were generally inconsistent. While some were quite confident of the "Type C" (i.e., cancer-prone personality; e.g., Eysenck, 1994), others found no association between personality variables and the development or course of cancer (e.g., Hahn & Petitti, 1988). More recent research has sided with the latter, finding little consistency in the predictive ability of personality features for cancer. In one meta-analysis, for example, the author concluded that "there is not any psychological factor for which an influence on cancer development has been convincingly demonstrated in a series of studies" (Garssen, 2004, p. 315), and in a commentary, the authors assert that it may be time to "retire" the personality-cancer hypothesis in favor of other, more promising avenues (Ranchor, Sanderman, & Coyne, 2010).

So it is with surprise that self-reported borderline PD and informant-reported histrionic PD were significantly predictive of increases in the probabilities of selves reporting cancer, and that self-reported narcissistic PD was significantly associated with

a decrease in the probability of selves reporting cancer. The reasons for these findings must be left to conjecture, for, to my knowledge, no other study has analyzed the *DSM* PDs in the prediction of cancer. Personality disorders may be linked to unhealthy behaviors, which could be precursors to the development of cancer. However, additional research is needed to determine whether these potentially important results are replicable or spurious.

Arthritis and asthma. For arthritis, self-reports of personality were significantly predictive in one of the regression equations, but no individual predictors emerged. For asthma, only self-reported borderline PD emerged, and it was associated with a significant increase in the probability of selves reporting asthma. I concluded that personality does not play much of a role in the prediction of these disorders.

Diabetes. Unlike heart disease, for which only PDs were predictive, diabetes was mostly predicted by normal personality variables, including self-reported openness, and informant-reported conscientiousness. Each of these was associated with significant decreases in the probability of selves reporting diabetes. The relationship between openness and health does not lend itself well to interpretation. But the relationship between informant-reported conscientiousness and diabetes is likely due to conscientious individuals being more health-conscious and exhibiting fewer health-damaging behaviors (Bogg & Roberts, 2004). The role of informant-reported narcissistic PD, which was also significantly associated with a decrease in the probability of selves reporting diabetes, will be discussed in the Individual Predictors section. No personality variables increased the probability of reporting diabetes.

Subjective Health

Powers and Oltmanns (2013), who first studied the relationship between personality and subjective health, found that both normal and disordered personality were predictive of self-reported subjective health. Likewise, in the current study I found that regression steps including normal and disordered personality variables were predictive of self-reported subjective health (see Table 15). In extension of their research, I also found that informant-reported personality could predict variance in self-reported health.

Self-reported subjective health. For individual predictors of self-reported subjective health, Powers and Oltmanns (2013) found that self-reported neuroticism was a negative predictor and self-reported openness was a positive predictor. Three PDs also emerged as individual predictors: schizoid, antisocial, and borderline PDs. Each was associated with decreases in self-reported subjective health. Although both studies have neuroticism and borderline PD in common, the other findings were inconsistent. In fact, schizoid and antisocial PDs did not emerge in any of the current analyses. This was perhaps due to the fact that Powers and Oltmanns (2013) used a smaller subset of SPAN individuals and used different predictors in the first steps of their regression equations.

Other variables that were predictive of self-reported subjective health in the current study were self-reported schizotypal PD, which was associated with decreases in self-reported subjective health; self-reported narcissistic PD, which was associated with increases in self-reported subjective health; and informant-reported dependent PD, which was associated with decreases in self-reported subjective health. As will be

discussed shortly, the positive relationship between narcissistic PD and self-reported subjective health makes intuitive sense. However, the negative relationship with schizotypal PD is less clear. Diagnostic features of schizotypal PD involve being asocial and uncomfortable in interpersonal relationships (American Psychiatric Association, 2000), and this lack of social support in older middle age may have negative health implications.

Informant-reported dependent PD's relationship with self-reported subjective health is interesting for three reasons. First, it was the only subjective health predictor to "cross over" and significantly predict the other person's opinion of the target's physical health. No self-reported personality variables predicted informant-reported subjective health, for example. Second, informant-reported dependent PD was the only predictor to emerge for both self- and informant-reported subjective health. And third, the causal relationship between dependent PD and subjective health is likely in the reverse direction of the other associations in the current study.

Instead of features of dependent PD predicting the reported levels of subjective physical health, it is likely that levels of subjective physical health predict were predictive of dependent PD features. This is because diagnostic features of dependent PD consist of MAPP items such as, "I depend on other people to take care of me," and "I feel scared or uncomfortable when left alone to care for myself." Self-reporters who endorse these criteria may have a physical disability that hinders their abilities to care for themselves. Hence, individuals may be endorsing items such as these for reasons other than having dependent PD pathology.

Informant-reported subjective health. For informant-reported subjective health, two predictors emerged as significant. Informant-reported dependent PD was associated with a decrease in informant-reported subjective health, and informant-reported narcissistic PD was associated with an increase in informant-reported subjective health. In other words, informants who perceived their participant targets as more dependent also perceived them as being less physically healthy, whereas informants who perceived their participant targets as more narcissistic perceived them as being more physically health. For dependent PD, it is likely that some individuals do have debilitating conditions and need assistance with self-care, as previously discussed. For neuroticism, one possibility is that neurotic individuals are indeed less healthy, as items from the NEO-PI-R address impulsivity and compulsive overeating. Another possibility, that neuroticism is associated only with somatic complaints, and not true physical disorders, will be discussed next.

Individual Predictors

Interestingly, neuroticism did not play any role in predicting the five physical health disorders. Given the evidence covered in the literature review which suggested that neuroticism can be involved in the onset and maintenance of physical health disorders, I expected that self- or informant-reported neuroticism would have emerged as a significant individual predictor of at least one of the health disorders. Neuroticism was involved in the prediction of subjective health, however, with increases in self-reported neuroticism being associated with decreases in reported self-reported subjective health (see Appendix C). That neuroticism was frequently predictive of subjective, but not

objective health, suggests that Costa and McCrae (1987) and Watson and Pennebaker (1989) were perhaps correct in asserting that neuroticism is associated more with somatic complaints than actual physical health.

Like with neuroticism, conscientiousness was notably absent from the results of the majority of the logistic regression analyses. Informant-reported conscientiousness, along with self-reported openness, did slightly decrease the probability of selves reporting diabetes, which was perhaps because a conscientious individual would be more likely to watch their diet and engage in positive health behaviors such as physical exercise (Bogg & Roberts, 2004). However, self- and informant-reported conscientiousness were not significant predictors for any of the other four physical health disorders, which was surprising, given the large effect that conscientiousness can have on health-related behaviors (Bogg & Roberts, 2004).

For disordered personality, one disorder, borderline PD frequently emerged as a significant individual predictor. Self-reported borderline PD predicted increases in heart disease, cancer, asthma, and subjective health. Based on these limited results, borderline PD as assessed via self reports seems to be the most important PD to consider in personality-health research. Additional research is needed to determine the various causal pathways, if such exist, that connect borderline PD to health-related outcomes. Specifically, does borderline PD's influence on health operate through the psychophysiological or behavioral pathways?

Somewhat surprisingly, narcissistic PD emerged as a significant positive predictor of subjective health (see Appendix C), with increases in narcissistic PD being

associated with increases in self-reported subjective health. Informant-reported narcissistic PD was also associated with a decrease in the probability of reporting diabetes, and self-reported narcissistic PD was associated with a decrease in the probability of selves reporting cancer. Along with obsessive-compulsive PD emerging as a negative predictor of heart disease, narcissistic and obsessive-compulsive PDs were the two disorders that were negatively associated of disorder, thereby decreasing the probability of selves reporting disorders.

Narcissistic PD's seemingly salubrious effect could be due to the vanity often associated with narcissism. One item from the MAPP, for example, is "Being noticed and/or admired by others is important to me," and was possibly the item that correlated the highest with physical health outcomes. This is because the desire to be admired by others may drive narcissistic individuals to keep in good physical condition, thereby leading a healthier lifestyle. For obsessive-compulsive PD, the connection with heart disease is less clear; but, the strict, rule-abiding nature of individuals with this disorder might lead them to more closely follow prescribed rules for healthy living and eating. This hypothesis, however, is essentially conjecture. More research is needed to determine if these findings replicate.

Finally, self- and informant-reported dependent PD emerged four times as a positive or negative predictor of health. I discussed dependent PD's potential association with subjective health earlier, as perhaps being an effect of physical health disorder rather than a cause. For heart disease, however, self-reported increases in dependent PD

were associated with a decreased probability of selves reporting heart disease. This finding is curious, and not easily explained.

Other Findings

Internal consistency. One finding of note was that informant reports of personality were usually more internally consistent (as measured by Cronbach's coefficient alpha) than self reports. Although the differences were often small, this finding replicated for four of the five FFM variables, nine of the 10 PDs, and the total MAPP score. The trend for informant-reports on the NEO-PI-R to be more internally consistent than self reports has also been documented by Costa and McCrae (1992b). Among the PDs, one possibility for this finding is that self reporters of PD could be biased by a lack of insight and/or the motivation to present themselves in a positive way, giving rise to an "uneven" or inconsistent reporting style across items intended to measure the same underlying constructs. Informant reports, while they surely have reliability and validity issues of their own, might be free of these two biases, which should make for a "clearer" or more consistent reporting style within PDs.

Self versus informant reports of personality and personality disorder. Using a series of mixed-design, or "split-plot" ANOVAs, I also analyzed which source reported higher scores on normal and disordered personality variables. The results for the normal personality variables were mixed, but a clear trend emerged for the PD variables. Informants reported more pathology on eight of the 10 PDs (the remaining two PDs were not significantly different) and on the total MAPP score. Again, the differences were small, but this finding suggests that informants detect pathology where

selves do not. Perhaps informants are more sensitive to the presence of personality pathology, as was the case with narcissistic PD (see Cooper et al., 2012), perhaps informants are more willing to report pathology than selves, or perhaps informants are even erroneously detecting personality pathology where it is not present. Regardless, future research is needed to determine whether this finding also extends to other measures of PD and other methods of assessment (e.g., diagnostic interview).

Regarding the correlations between self and informant perspectives on PD, the coefficients were small, but significant, and all in the positive direction. Personality disorders have a history of low concordance between self and informant reports, with agreement being "modest at best" (Klonsky et al., 2002, p. 300). The low correlations found here are consistent with previous research. As was just discussed, informants reported more PD than selves on average for eight of the 10 PDs, so one area of the "disagreement" between selves and informants stems from this discrepancy. Also consistent with previous research is that narcissistic PD had the lowest self-informant correlation (see Klonsky et al., 2002), suggesting that agreement is particularly poor for this disorder.

Mean level differences of subjective health ratings. Similar to how informant reports of PD depicted slightly more pathology than self reports, informant reports of subjective health were also "worse" than self reports. In other words, informants view the participants as being less healthy than participants view themselves. Unfortunately, I am unaware of any study which has analyzed informant reports of subjective health, so I cannot speak to the validity of the informant reports. But the difference in subjective

health ratings could again be due to some sort of self-serving bias (that informant reports may be bypassing), with selves believing that they are in better health than how others see them. Future research is needed to determine whether self- or informant-reported subjective health is a better predictor of actual physical health and mortality.

Limitations and Strengths

Perhaps the greatest limitations of the current study center around the way in which the physical health disorders were measured. Rather than directly assessing for signs and symptoms of heart disease, cancer, etc., physical health disorders were assessed via a computerized questionnaire. Participants were asked to report if they had ever "been under the care of a doctor" for each of the five disorders. By asking participants, instead of physically assessing for the presence of the five disorders, it is likely that instances of the disorders were missed or even erroneously reported. Although physically assessing for the presence of each of these disorders would have been prohibitively expensive and time-consuming for a sample of this size, the validity of the current results and conclusions may be affected by the method of assessment used to determine the presence of the five physical health disorders. The current study represents an initial foray into analyzing these potentially important connections.

Further, the physical health disorder categories were quite broad. Cancer, for example, can develop in countless regions of the body and form from multiple etiologies. Considering cancer to be a uniform diagnostic entity is not ideal, and oversimplifies this complex disorder. Likewise, there are many conditions that fall under the umbrella term of "heart disease," and diabetes can be further classified into Types I,

Type II, and even gestational. In short, the ways in which disorders were assessed were broad and at the category level; nuanced assessments of these disorders would have been more valid and would have yielded more accurate predictive relationships.

Another limitation was the cross-sectional design of the current study. While the SPAN is a longitudinal prospective study, physical health disorders were only measured at one time point, rendering it impossible to determine how disorder prevalence changed over time, as well as predict the onset of disorders. Further, I was unable to determine causality. Specifically, I was unable determine whether personality differences predicted physical disorders or the presence of physical disorders resulted in personality change. As will be discussed in the Future Directions section, personality change has emerged as another predictor of physical health; a comprehensive study would also include a metric of personality change, which could only be ascertained by a study with multiple time points of both personality and physical health.

Strengths of the study were its measurement of personality and large, epidemiological sample. Personality was assessed via the full NEO-PI-R, a well-validated and researched measure of normal personality from the perspective of the FFM. To have full normal personality and a measure of disordered personality for over 1,100 adults is a definite strength of the sample. Further, to have an epidemiologically accurate sample of a medium-sized U.S. city for the specified age range is another strong point. Unfortunately, the sample also contained a weakness: The ages of the individuals (55-65 years old). Even though the five physical health disorders were present in the sample, the sample may not be aged enough for the participants to seek treatment for

them. Following these late middle-aged adults into older adulthood (65+) and beyond would be ideal to determine how personality influences physical health, as disorders generally grow more prevalent and severe with age.

A final limitation was statistical in nature. Specifically, I sought to compare whether PD variables could outperform normal personality variables in predicting variance in physical health disorders. Because there were 10 PDs and only five normal personality traits, there were twice as many "disordered" predictors as "normal" predictors. Having an unequal number of predictors in a regression equation could possibly bias the results in the direction of the variables with more predictors (i.e., the PDs). Hence, the normal versus disordered personality comparisons may be biased to a small degree in "favor" of the disordered personality variables.

Future Directions

Personality change and health. As stated previously, personality and health were only measured at one time point in the current study. A prospective longitudinal design would have been better suited for predicting the onset of physical health disorders and would have allowed for charting the course of personality, PD, and physical health over time. Ideally, a longitudinal study with multiple time points could be designed to determine whether personality, personality disorder, and personality *change* can predict the onset and presence of physical health disorders.

The amount of change in a personality trait over time, not only one's overall personality trait levels, has been found to be associated with health (e.g., Magee, Heaven, L. M. Miller, 2013). Mroczek and Spiro (2007) first documented the notable

finding that an increasing level of neuroticism, not only one's static level of neuroticism, was predictive of health in older men. Specifically, the authors found that older men who were above average in neuroticism and reported increasing levels of neuroticism over time had higher rates of mortality (Mroczek & Spiro, 2007). And Turiano et al. (2012) reported that changes in extraversion, agreeableness, and conscientiousness were related to self-rated health, and concluded that their findings "demonstrate that a full understanding of the link between personality and health requires consideration of trait change as well as trait level" (p. 4).

In a recent study, Cooper, Balsis, and Oltmanns (2014) found that the trajectories of self- and informant-reported personality traits differ by which source one asks. Self-reported personality traits generally "improve" over time, as evidenced by mean-level increases in emotional stability (neuroticism scored in the reverse direction), agreeableness, and conscientiousness (Roberts, Walton, & Viechtbauer, 2006; Srivastava, John, Gosling, & Potter, 2003). Interestingly, informant reported personality traits generally "worsened" over time, as evidenced by mean-level decreases in extraversion, agreeableness, and conscientiousness (Cooper et al., 2014). Since personality change is associated with health (Mroczek & Spiro, 2007; Turiano et al., 2012) and selves and informants provide discrepant change trajectories, it seems likely that the perspective offered by informants will yield different health-related associations. Additional research is needed in this promising area.

Personality change and mortality. In the current study, I was unable to include mortality as dependent variable because there were too few cases of death in the SPAN

study. But the most important health outcome is perhaps death; any variables that are predictive of mortality should be given extra consideration. Two of the FFM factors, neuroticism and conscientiousness, have been consistently found to be predictive of death. For neuroticism, Shipley, Weiss, Der, Taylor, and Deary (2007) reported that increases in neuroticism were predictive of death from cardiovascular disease; Christensen et al. (2002) found that neuroticism was associated with a higher mortality rate among patients with chronic renal insufficiency; and among older adults, Wilson, de Leon, Bienias, Evans, and Bennett (2004) found that mortality risk was nearly doubled in those scoring high as compared to low in neuroticism. For conscientiousness, chronic renal insufficiency patients who were low in conscientiousness had an increased mortality rate (Christensen et al., 2002), probably due to a lack of discipline in following their prescribed treatment regimens; conscientious individuals are "less likely to die at any given age" (Kern & Friedman, 2008, p. 510), and, similarly, conscientiousness predicts mortality risk across the lifespan, with individuals higher in conscientiousness at a lower risk (Martin, Friedman, & Schwartz, 2007).

Personality disorder and mortality. There has been little systematic research on the topic of PDs and mortality. There are, however, important links between PDs and mortality, specifically among two of the Cluster B disorders: antisocial and borderline. Those with antisocial PD, for example, can be reckless, sensation-seeking, and irresponsible, a potential recipe for an early death. Indeed, individuals with antisocial PD who were under the age of 40 had a higher chance of mortality than expected for their age group (Black, Baumgard, Bell, & Kao, 1996). And individuals with borderline PD

can be impulsive and suicidal—another potentially deadly combination. Black, Blum, Pfohl, and Hale (2004) found that at least 75% of individuals with borderline PD attempt suicide, with about 10% completing their attempt. Consistent with this result, roughly 10% of patients initially diagnosed with borderline PD had committed suicide in a 27-year longitudinal study (Paris & Zweig-Frank, 2001).

Treatment-seeking individuals with a primary diagnosis of PD also had a dramatically reduced life expectancy, dying an average of over 15 years earlier than normal (Fok et al., 2012). And at least two other PDs have conceptual ties to mortality. Two of the diagnostic features of schizoid and schizotypal PD, for example, are experiencing discomfort in social situations and having few close friends (American Psychiatric Association, 2000), both of which would impact one's system of social support. Because a lack of social support is related to mortality among the elderly (e.g., Blazer, 1981), individuals with schizoid or schizotypal PD may also be at an increased risk for death. Therefore, future studies should include mortality as a dependent variable, as normal and disordered personality traits have ties, both empirical and conceptual to death.

Conclusions

The majority of research on personality and health uses self reports of normal personality. In the current study, I sought to determine whether the addition of informant reports and disordered personality would increase the predictive abilities of physical health outcomes. Because they predict additional variance, oftentimes where self reports of normal personality did not, informant reports of personality and disordered

personality measures should perhaps be included in future studies, as they offer a fuller evaluation of the personality-health relationship. The causal pathways, however, remain unclear, and should be the topic of future research.

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APPENDIX A

Table A-1

Personality Scores by Source and Gender

	Participants		Informants	
NEO-PI-R	Males *M* (*SD*)	Females *M* (*SD*)	Males *M* (*SD*)	Females *M* (*SD*)
Neuroticism	72.68 (20.05)	74.43 (20.58)	75.39 (25.12)	81.35 (25.72)
Extraversion	106.82 (18.63)	108.44 (18.10)	106.77 (21.70)	112.64 (20.65)
Openness	110.33 (18.74)	113.18 (18.12)	103.70 (19.59)	107.59 (18.75)
Agreeableness	124.90 (15.45)	133.22 (13.92)	120.39 (24.18)	127.45 (21.99)
Conscientiousness	123.49 (17.40)	122.81 (17.43)	125.41 (26.20)	129.60 (24.76)
MAPP				
Paranoid	5.38 (3.89)	4.74 (3.60)	6.37 (4.96)	6.60 (5.05)
Schizoid	7.61 (3.77)	7.29 (3.64)	7.61 (4.43)	7.12 (4.08)
Schizotypal	5.34 (4.05)	4.38 (3.67)	5.44 (4.30)	5.71 (4.67)

Antisocial	4.06 (2.89)	3.09 (2.17)	4.39 (3.64)	3.69 (3.36)
Borderline	4.57 (3.72)	3.22 (3.21)	4.96 (4.59)	4.98 (5.02)
Histrionic	6.38 (4.04)	5.60 (3.51)	6.29 (4.49)	6.78 (4.81)
Narcissistic	7.15 (4.51)	5.69 (3.70)	7.84 (5.76)	7.36 (5.80)
Avoidant	4.45 (3.85)	4.43 (3.95)	3.81 (4.05)	4.47 (4.31)
Dependent	2.90 (3.16)	2.66 (2.98)	3.44 (4.16)	3.64 (4.13)
Obs-comp	9.96 (4.46)	8.61 (4.38)	10.97 (5.04)	11.07 (4.90)
Total MAPP	57.79 (28.12)	49.71 (25.20)	61.12 (34.05)	61.36 (35.31)

Note. NEO-PI-R = Revised NEO Personality Inventory; MAPP = Multisource Assessment of Personality Pathology; Obs-comp = Obsessive-compulsive.

Table A-2

Personality Scores by Source and Race

	Participants		Informants	
NEO-PI-R	Whites *M* (*SD*)	Blacks *M* (*SD*)	Whites *M* (*SD*)	Blacks *M* (*SD*)

Neuroticism	74.21 (21.42)	72.41 (17.73)	80.29 (26.62)	75.13 (22.86)
Extraversion	108.11 (19.40)	106.86 (15.74)	109.54 (22.15)	111.11 (19.30)
Openness	114.40 (19.37)	106.35 (14.79)	107.84 (20.49)	101.43 (15.14)
Agreeableness	130.13 (15.34)	128.14 (14.78)	125.61 (23.30)	121.39 (22.88)
Conscientiousness	122.40 (18.24)	124.70 (15.33)	125.98 (26.46)	129.43 (23.10)
MAPP				
Paranoid	4.68 (3.34)	5.81 (4.43)	6.20 (4.71)	7.16 (5.58)
Schizoid	7.06 (3.44)	8.27 (4.10)	7.10 (4.11)	7.87 (4.50)
Schizotypal	4.52 (3.48)	5.45 (4.56)	5.51 (4.34)	5.79 (4.86)
Antisocial	3.69 (2.45)	3.15 (2.76)	4.08 (3.26)	3.82 (3.98)
Borderline	3.86 (3.30)	3.73 (3.95)	5.02 (4.68)	4.88 (5.16)
Histrionic	6.11 (3.64)	5.57 (4.02)	6.64 (4.56)	6.38 (4.93)
Narcissistic	6.53 (3.90)	5.93 (4.61)	7.60 (5.45)	7.50 (6.49)
Avoidant	4.71 (3.87)	3.85 (3.94)	4.61 (4.29)	3.21 (3.85)
Dependent	3.04 (3.06)	2.16 (2.98)	3.79 (4.05)	3.02 (4.30)

Obs-comp	9.15 (4.33)	9.36 (4.75)	10.96 (4.89)	11.11 (5.12)
Total MAPP	53.33 (24.63)	53.27 (31.21)	61.49 (33.05)	60.73 (38.29)

Note. NEO-PI-R = Revised NEO Personality Inventory; MAPP = Multisource Assessment of Personality Pathology; Obs-comp = Obsessive-compulsive.

Table A-3

Personality Scores by Gender and Race

	Males		Females	
NEO-PI-R	Whites *M* (*SD*)	Blacks *M* (*SD*)	Whites *M* (*SD*)	Blacks *M* (*SD*)
Neuroticism	74.64 (20.48)	72.60 (15.03)	79.40 (20.61)	74.53 (17.90)
Extraversion	106.40 (18.65)	107.72 (14.84)	110.75 (18.11)	110.07 (15.12)
Openness	108.81 (18.16)	102.82 (12.35)	112.98 (17.09)	104.77 (12.80)
Agreeableness	123.38 (16.65)	120.90 (16.90)	131.46 (14.91)	127.60 (14.17)
Conscientiousness	124.38 (19.41)	124.62 (16.46)	124.87 (19.38)	129.07 (15.32)
MAPP				

Paranoid	5.58 (3.29)	6.58 (3.61)	5.33 (4.22)	6.42 (4.22)
Schizoid	7.38 (3.22)	8.15 (3.03)	6.83 (2.92)	7.89 (3.33)
Schizotypal	5.21 (3.04)	5.82 (3.25)	4.87 (3.09)	5.47 (3.96)
Antisocial	4.29 (2.41)	4.06 (2.83)	3.54 (2.04)	3.05 (2.43)
Borderline	4.77 (3.14)	4.76 (3.41)	4.17 (3.19)	3.97 (3.81)
Histrionic	6.37 (3.32)	6.25 (3.18)	6.39 (3.18)	5.77 (3.61)
Narcissistic	7.61 (3.67)	7.22 (4.11)	6.63 (3.43)	6.34 (4.18)
Avoidant	4.43 (3.11)	3.43 (2.80)	4.86 (3.43)	3.60 (3.07)
Dependent	3.32 (2.79)	2.81 (2.87)	3.50 (2.81)	2.43 (2.93)
Obs-comp	10.56 (3.73)	10.25 (3.07)	9.65 (3.54)	10.25 (3.98)
Total MAPP	59.51 (22.34)	59.33 (24.02)	55.76 (22.33)	55.29 (28.81)

Note. NEO-PI-R = Revised NEO Personality Inventory; MAPP = Multisource Assessment of Personality Pathology; Obs-comp = Obsessive-compulsive.

Table A-4

Personality Scores by Source by Gender by Race

	Participants				Informants			
	Males		Females		Males		Females	
NEO-PI-R	Whites M (SD)	Blacks M (SD)	Whites M (SD)	Blacks M (SD)	Whites M (SD)	Blacks M (SD)	Whites M (SD)	Blacks M (SD)
N	72.91 (21.58)	72.14 (15.95)	75.28 (21.24)	72.62 (19.00)	76.38 (26.30)	73.06 (21.99)	83.52 (26.47)	76.69 (23.41)
E	106.93 (106.56)	106.56 (15.99)	109.08 (19.14)	107.08 (15.58)	105.87 (22.62)	108.88 (19.24)	112.57 (21.30)	112.80 (19.20)
O	112.25 (19.87)	105.83 (14.90)	116.18 (18.77)	106.75 (14.73)	105.37 (21.10)	99.81 (14.78)	109.89 (19.75)	102.65 (15.32)
A	125.16 (15.29)	124.28 (15.85)	134.23 (14.13)	131.06 (13.22)	121.61 (24.06)	117.53 (24.27)	128.92 (22.14)	124.31 (21.37)
C	123.20	124.18	121.74	125.09	125.55	125.06	128.15	132.72

	(18.44)	(14.73)	(18.06)	(15.78)	(26.62)	(25.12)	(26.25)	(20.90)
MAPP								
Par	5.06	6.14	4.36	5.55	6.10	7.01	6.28	7.27
	(3.56)	(4.48)	(3.11)	(4.38)	(4.85)	(5.17)	(4.59)	(5.87)
Szd	7.38	8.16	6.80	8.34	7.38	8.14	6.87	7.65
	(3.54)	(4.23)	(3.34)	(4.01)	(4.42)	(4.45)	(3.83)	(4.54)
Szt	5.07	5.97	4.06	5.06	5.34	5.68	5.64	5.87
	(3.69)	(4.74)	(3.23)	(4.39)	(4.26)	(4.39)	(4.41)	(5.19)
Ant	4.23	3.67	3.24	2.76	4.36	4.45	3.84	3.35
	(2.71)	(3.24)	(2.11)	(2.26)	(3.40)	(4.14)	(3.12)	(3.80)
Bor	4.64	4.40	3.21	3.23	4.90	5.12	5.11	4.70
	(3.53)	(4.14)	(2.95)	(3.72)	(4.44)	(4.94)	(4.87)	(5.33)
Hst	6.50	6.09	5.80	5.19	6.24	6.42	6.98	6.35
	(4.00)	(4.11)	(3.29)	(3.91)	(4.34)	(4.85)	(4.72)	(5.01)
Nar	7.34	6.70	5.86	5.34	7.89	7.73	7.37	7.33

	(4.26)	(5.01)	(3.43)	(4.20)	(5.46)	(6.44)	(5.43)	(6.53)
Avd	4.72	3.83	4.70	3.86	4.14	3.03	4.99	3.35
	(3.77)	(3.99)	(3.95)	(3.90)	(4.19)	(3.62)	(4.35)	(4.01)
Dep	3.09	2.44	3.00	1.95	3.55	3.18	3.99	2.90
	(3.09)	(3.26)	(3.03)	(2.74)	(4.09)	(4.32)	(4.00)	(4.29)
Obs	10.03	9.78	8.41	9.04	11.08	10.72	10.85	11.40
	(4.36)	(4.71)	(4.17)	(4.77)	(5.23)	(4.57)	(4.60)	(5.49)
MAPP	58.05	57.19	49.52	50.31	60.98	61.47	62.00	60.27
	(25.92)	(32.78)	(22.89)	(29.78)	(33.27)	(35.90)	(32.91)	(40.11)

Note. NEO-PI-R = Revised NEO Personality Inventory; N = neuroticism; E = extraversion; O = openness; A = agreeableness; C = conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive; MAPP = Multisource Assessment of Personality Pathology total score.

Table A-5

Frequencies of Heart Disease by Gender

	No	Yes
Males	538 (86%)	91 (14%)
Females	702 (90%)	80 (10%)

Table A-6

Frequencies of Heart Disease by Race

	No	Yes
Whites	866 (89%)	109 (11%)
Blacks	374 (86%)	62 (14%)

Table A-7

Frequencies of Cancer by Gender

	No	Yes
Males	557 (89%)	72 (11%)
Females	676 (86%)	106 (14%)

Table A-8

Frequencies of Cancer by Race

	No	Yes
Whites	844 (87%)	131 (13%)
Blacks	389 (89%)	47 (11%)

Table A-9

*Frequencies of Arthritis by Gender**

	No	Yes
Males	512 (81%)	117 (19%)
Females	550 (70%)	232 (30%)

* $p < .001$

Table A-10

*Frequencies of Arthritis by Race**

	No	Yes
Whites	762 (78%)	213 (22%)
Blacks	300 (69%)	136 (31%)

* $p < .001$

Table A-11

*Frequencies of Asthma by Gender**

	No	Yes
Males	576 (92%)	53 (8%)
Females	669 (85%)	113 (15%)

* $p < .001$

Table A-12

Frequencies of Asthma by Race

	No	Yes
Whites	870 (89%)	105 (11%)
Blacks	375 (86%)	61 (14%)

Table A-13

Frequencies of Diabetes by Gender

	No	Yes
Males	535 (85%)	94 (15%)
Females	641 (82%)	141 (18%)

Table 14

*Frequencies of Diabetes by Race**

	No	Yes
Whites	868 (89%)	107 (11%)
Blacks	308 (70%)	128 (30%)

* $p < .001$

APPENDIX B

Results are displayed following the guidelines for logistic regression as suggested by Peng, Lee, and Ingersoll (2002).

Table B-1

Hierarchical Logistic Regression with Personality Variables Predicting Heart Disease via Self Then Informant Reports

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	-.268	.196	1.871	1	.171	.765
	Race	-.004	.005	.535	1	.464	.996
	IGender	.098	.195	.251	1	.616	1.103
	Self N	.010	.007	1.896	1	.169	1.010
	Self E	.002	.007	.090	1	.764	1.002
	Self O	-.006	.007	.872	1	.351	.994
	Self A	-.001	.007	.033	1	.857	.999
	Self C	.010	.008	1.804	1	.179	1.010
	Self Par	.015	.035	.179	1	.672	1.015
	Self Szd	.048	.029	2.781	1	.095	1.049
	Self Szt	-.007	.035	.037	1	.847	.993
	Self Ant	.019	.045	.186	1	.666	1.019
	Self Bor	.100	.039	6.644	1	.010*	1.105

Self Hst	.066	.033	3.888	1	.049*	1.068
Self Nar	-.031	.032	.974	1	.324	.969
Self Avd	-.046	.034	1.802	1	.180	.955
Self Dep	-.082	.041	4.011	1	.045*	.921
Self Obs	-.059	.028	4.483	1	.034*	.942
Inf N	-.004	.006	.384	1	.535	.996
Inf E	-.006	.006	1.034	1	.309	.994
Inf O	.009	.007	2.092	1	.148	1.009
Inf A	.004	.006	.414	1	.520	1.004
Inf C	-.001	.005	.046	1	.830	.999
Inf Par	.032	.030	1.158	1	.282	1.033
Inf Szd	.032	.026	1.434	1	.231	1.032
Inf Szt	-.023	.031	.540	1	.462	.977
Inf Ant	-.011	.041	.076	1	.783	.989
Inf Bor	.035	.032	1.141	1	.286	1.035
Inf Hst	-.014	.031	.206	1	.650	.986
Inf Nar	< .001	.029	< .001	1	.995	1.000
Inf Avd	-.018	.033	.281	1	.596	.983
Inf Dep	.062	.029	4.536	1	.033*	1.064
Inf Obs	-.038	.024	2.505	1	.114	.963

Model Summary	χ^2	*df*	*p*	R^2
	59.136	33	.003*	.079*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$

Table B-2

Hierarchical Logistic Regression with Personality Variables Predicting Cancer via Self Then Informant Reports

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.064	.194	.110	1	.741	1.066
	Race	.007	.005	2.022	1	.155	1.008
	IGender	.130`	.189	.477	1	.490	1.139
	Self N	-.001	.007	.039	1	.843	.999
	Self E	-.006	.007	.752	1	.386	.994
	Self O	.004	.006	.386	1	.534	1.004
	Self A	.009	.007	1.340	1	.247	1.009
	Self C	.006	.007	.667	1	.414	1.006
	Self Par	.010	.038	.065	1	.798	1.010

Self Szd	.037	.029	1.642	1	.200	1.038
Self Szt	.021	.035	.356	1	.551	1.021
Self Ant	.005	.046	.010	1	.921	1.005
Self Bor	.091	.040	5.132	1	.023*	1.095
Self Hst	-.006	.035	.033	1	.855	.994
Self Nar	-.068	.033	4.283	1	.038*	.934
Self Avd	.023	.033	.471	1	.492	1.023
Self Dep	-.023	.041	.317	1	.574	.977
Self Obs	-.036	.027	1.796	1	.180	.965
Inf N	-.002	.006	.107	1	.743	.998
Inf E	.007	.006	1.060	1	.303	1.007
Inf O	.004	.006	.414	1	.520	1.004
Inf A	-.005	.006	.686	1	.407	.995
Inf C	.002	.006	.152	1	.696	1.002
Inf Par	.004	.032	.014	1	.904	1.004
Inf Szd	.008	.027	.096	1	.757	1.009
Inf Szt	-.065	.033	3.756	1	.053	.937
Inf Ant	-.063	.044	2.104	1	.147	.938
Inf Bor	-.043	.036	1.480	1	.224	.958
Inf Hst	.107	.032	11.467	1	.001*	1.113
Inf Nar	-.033	.030	1.227	1	.268	.968
Inf Avd	.050	.034	2.110	1	.146	1.051

Inf Dep	-.007	.033	.045	1	.833	.993
Inf Obs	-.002	.025	.010	1	.921	.998

Model Summary	χ^2	*df*	*p*	R^2
	50.258	33	.028*	.066*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-3

Hierarchical Logistic Regression with Personality Variables Predicting Arthritis via Self Then Informant Reports

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.807	1.55	27.156	1	< .001*	2.242
	Race	-.008	.004	4.293	1	.038*	.992
	IGender	.284	.146	3.820	1	.051	1.328
	Self N	.008	.005	2.234	1	1.35	1.008
	Self E	-.004	.006	.572	1	.450	.996
	Self O	-.006	.005	1.236	1	.266	.994

Self A	-.001	.006	.052	1	.819	.999
Self C	.003	.006	.276	1	.599	1.003
Self Par	-.014	.028	.260	1	.610	.986
Self Szd	-.001	.023	.003	1	.959	1.003
Self Szt	.048	.026	3.290	1	.070	1.049
Self Ant	.033	.035	.886	1	.347	1.033
Self Bor	.005	.031	.022	1	.883	1.005
Self Hst	.050	.026	3.290	1	.070	1.049
Self Nar	-.036	.025	2.111	1	.146	.965
Self Avd	-.037	.026	1.987	1	.159	.964
Self Dep	-.025	.031	.664	1	.415	.975
Self Obs	.010	.021	.224	1	.636	1.010
Inf N	-.002	.005	.132	1	.716	.998
Inf E	.002	.005	.219	1	.640	1.002
Inf O	-.004	.005	.722	1	.395	.996
Inf A	-.004	.005	.559	1	.455	.996
Inf C	.001	.004	.073	1	.786	1.001
Inf Par	-.030	.024	1.553	1	.213	.971
Inf Szd	-.011	.021	.303	1	.582	.989
Inf Szt	.025	.024	1.056	1	.304	1.025
Inf Ant	-.017	.032	.295	1	.587	.983
Inf Bor	.047	.026	3.285	1	.070	1.048

Inf Hst	.018	.024	.556	1	.456	1.018
Inf Nar	-.033	.022	2.214	1	.137	.968
Inf Avd	-.032	.026	1.487	1	.223	.969
Inf Dep	.017	.024	.513	1	.474	1.017
Inf Obs	.002	.018	.017	1	.897	1.002

Model Summary	χ^2	*df*	*p*	R^2
	81.740	33	< .001*	.084

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-4

Hierarchical Logistic Regression with Personality Variables Predicting Asthma via Self Then Informant Reports

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.631	.210	9.052	1	.003*	1.880
	Race	-.007	.005	1.817	1	1.78	.993

IGender	-.297	.185	2.578	1	.108	.743
Self N	.005	.007	.584	1	.445	1.005
Self E	.012	.008	2.564	1	.109	1.013
Self O	.007	.007	1.180	1	.277	1.007
Self A	-.012	.008	2.605	1	.107	.998
Self C	< .001	.007	.004	1	.949	1.000
Self Par	.020	.037	.300	1	.584	1.021
Self Szd	.033	.030	1.256	1	.262	1.034
Self Szt	-.012	.036	.105	1	.745	.989
Self Ant	-.025	.046	.302	1	.583	.975
Self Bor	.089	.041	4.805	1	.028*	1.093
Self Hst	-.007	.035	.042	1	.837	.993
Self Nar	-.050	.032	2.400	1	.121	.951
Self Avd	.014	.034	.160	1	.689	1.014
Self Dep	-.023	.040	.343	1	.558	.977
Self Obs	.006	.028	.053	1	.818	1.006
Inf N	-.001	.006	.036	1	.850	.999
Inf E	.001	.007	.202	1	.886	1.001
Inf O	-.005	.007	.616	1	.432	.995
Inf A	.003	.006	.226	1	.634	1.003
Inf C	.006	.006	.915	1	.339	1.006
Inf Par	.004	.031	.017	1	.895	1.004

Inf Szd	-.010	.028	.141	1	.707	.990
Inf Szt	-.038	.033	1.311	1	.252	.963
Inf Ant	.030	.042	.503	1	.478	1.030
Inf Bor	.050	.033	2.270	1	.132	1.051
Inf Hst	.038	.032	1.432	1	.232	1.039
Inf Nar	-.016	.029	.313	1	.576	.984
Inf Avd	-.010	.035	.078	1	.780	.990
Inf Dep	.006	.031	.033	1	.857	1.006
Inf Obs	-.034	.024	1.910	1	.167	.967

Model Summary	χ^2	*df*	*p*	R^2
	57.536	33	.005*	.078

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-5

Hierarchical Logistic Regression with Personality Variables Predicting Diabetes via Self Then Informant Reports

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β}

						(odds ratio)
	Gender	.378	.179	4.480	1	.034*	1.460
	Race	-.030	.004	46.606	1	< .001*	.971
	IGender	.384	.177	4.706	1	.030*	1.467
	Self N	.010	.006	2.501	1	.114	1.010
	Self E	.004	.007	.246	1	.620	1.004
	Self O	-.020	.006	10.173	1	.001*	.980
	Self A	-.013	.007	3.525	1	.060	.987
	Self C	.010	.007	2.214	1	.137	1.010
	Self Par	-.013	.032	.176	1	.675	.987
	Self Szd	.011	.026	.187	1	.666	1.011
	Self Szt	-.007	.032	.046	1	.831	.993
	Self Ant	.029	.041	.494	1	.482	1.030
	Self Bor	.012	.037	.105	1	.746	1.012
	Self Hst	-.044	.033	1.762	1	.184	.957
	Self Nar	-.009	.029	.060	1	.807	.993
	Self Avd	-.017	.031	.305	1	.581	.983
	Self Dep	.025	.036	.495	1	.482	1.026
	Self Obs	-.013	.024	.268	1	.605	.988
	Inf N	.003	.006	.381	1	.537	1.003
	Inf E	.009	.006	2.068	1	.150	1.009
	Inf O	.007	.006	1.415	1	.234	1.007

Inf A	< .001	.006	.001	1	.975	1.000
Inf C	-.013	.005	6.709	1	.010*	.987
Inf Par	.033	.027	1.441	1	.230	1.033
Inf Szd	-.019	.024	.023	1	.879	1.004
Inf Szt	-.019	.029	.411	1	.522	.982
Inf Ant	.030	.037	.666	1	.414	1.031
Inf Bor	.005	.031	.022	1	.881	1.005
Inf Hst	-.053	.030	3.127	1	.077	.949
Inf Nar	-.058	.027	.4600	1	.032*	.944
Inf Avd	.021	.030	.531	1	.466	1.022
Inf Dep	.022	.027	.653	1	.419	1.022
Inf Obs	.014	.021	.454	1	.500	1.014

Model Summary	χ^2	*df*	*p*	R^2
	130.329	33	< .001*	.149*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-6

Hierarchical Logistic Regression with Personality Variables Predicting Heart Disease via Informant Then Self Reports

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	-.268	.196	1.871	1	.171	.765
	Race	-.004	.005	.535	1	.464	.996
	IGender	.098	.195	.251	1	.616	1.103
	Inf N	-.004	.006	.384	1	.535	.996
	Inf E	-.006	.006	1.034	1	.309	.994
	Inf O	.009	.007	2.092	1	.148	1.009
	Inf A	.004	.006	.414	1	.520	1.004
	Inf C	-.001	.005	.046	1	.830	.999
	Inf Par	.032	.030	1.158	1	.282	1.033
	Inf Szd	.032	.026	1.434	1	.231	1.032
	Inf Szt	-.023	.031	.540	1	.462	.977
	Inf Ant	-.011	.041	.076	1	.783	.989
	Inf Bor	.035	.032	1.141	1	.286	1.035
	Inf Hst	-.014	.031	.206	1	.650	.986
	Inf Nar	< .001	.029	< .001	1	.995	1.000
	Inf Avd	-.018	.033	.281	1	.596	.983
	Inf Dep	.062	.029	4.536	1	.033*	1.064

Inf Obs	-.038	.024	2.505	1	.114	.963
Self N	.010	.007	1.896	1	.169	1.010
Self E	.002	.007	.090	1	.764	1.002
Self O	-.006	.007	.872	1	.351	.994
Self A	-.001	.007	.033	1	.857	.999
Self C	.010	.008	1.804	1	.179	1.010
Self Par	.015	.035	.179	1	.672	1.015
Self Szd	.048	.029	2.781	1	.095	1.049
Self Szt	-.007	.035	.037	1	.847	.993
Self Ant	.019	.045	.186	1	.666	1.019
Self Bor	.100	.039	6.644	1	.010*	1.105
Self Hst	.066	.033	3.888	1	.049*	1.068
Self Nar	-.031	.032	.974	1	.324	.969
Self Avd	-.046	.034	1.802	1	.180	.955
Self Dep	-.082	.041	4.011	1	.045*	.921
Self Obs	-.059	.028	4.483	1	.034*	.942

Model Summary	χ^2	*df*	*p*	R^2
	59.136	33	.003*	.079*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial;

Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-7

Hierarchical Logistic Regression with Personality Variables Predicting Cancer via Informant Then Self Reports

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.064	.194	.110	1	.741	1.066
	Race	.007	.005	2.022	1	.155	1.008
	IGender	.130`	.189	.477	1	.490	1.139
	Inf N	-.002	.006	.107	1	.743	.998
	Inf E	.007	.006	1.060	1	.303	1.007
	Inf O	.004	.006	.414	1	.520	1.004
	Inf A	-.005	.006	.686	1	.407	.995
	Inf C	.002	.006	.152	1	.696	1.002
	Inf Par	.004	.032	.014	1	.904	1.004
	Inf Szd	.008	.027	.096	1	.757	1.009
	Inf Szt	-.065	.033	3.756	1	.053	.937
	Inf Ant	-.063	.044	2.104	1	.147	.938
	Inf Bor	-.043	.036	1.480	1	.224	.958

Inf Hst	.107	.032	11.467	1	.001*	1.113
Inf Nar	-.033	.030	1.227	1	.268	.968
Inf Avd	.050	.034	2.110	1	.146	1.051
Inf Dep	-.007	.033	.045	1	.833	.993
Inf Obs	-.002	.025	.010	1	.921	.998
Self N	-.001	.007	.039	1	.843	.999
Self E	-.006	.007	.752	1	.386	.994
Self O	.004	.006	.386	1	.534	1.004
Self A	.009	.007	1.340	1	.247	1.009
Self C	.006	.007	.667	1	.414	1.006
Self Par	.010	.038	.065	1	.798	1.010
Self Szd	.037	.029	1.642	1	.200	1.038
Self Szt	.021	.035	.356	1	.551	1.021
Self Ant	.005	.046	.010	1	.921	1.005
Self Bor	.091	.040	5.132	1	.023*	1.095
Self Hst	-.006	.035	.033	1	.855	.994
Self Nar	-.068	.033	4.283	1	.038*	.934
Self Avd	.023	.033	.471	1	.492	1.023
Self Dep	-.023	.041	.317	1	.574	.977
Self Obs	-.036	.027	1.796	1	.180	.965

Model Summary	χ^2	*df*	*p*	R^2
	50.258	33	.028*	.066*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-8

Hierarchical Logistic Regression with Personality Variables Predicting Arthritis via Informant Then Self Reports

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.807	1.55	27.156	1	< .001*	2.242
	Race	-.008	.004	4.293	1	.038*	.992
	IGender	.284	.146	3.820	1	.051	1.328
	Inf N	-.002	.005	.132	1	.716	.998
	Inf E	.002	.005	.219	1	.640	1.002
	Inf O	-.004	.005	.722	1	.395	.996
	Inf A	-.004	.005	.559	1	.455	.996
	Inf C	.001	.004	.073	1	.786	1.001
	Inf Par	-.030	.024	1.553	1	.213	.971
	Inf Szd	-.011	.021	.303	1	.582	.989

Inf Szt	.025	.024	1.056	1	.304	1.025
Inf Ant	-.017	.032	.295	1	.587	.983
Inf Bor	.047	.026	3.285	1	.070	1.048
Inf Hst	.018	.024	.556	1	.456	1.018
Inf Nar	-.033	.022	2.214	1	.137	.968
Inf Avd	-.032	.026	1.487	1	.223	.969
Inf Dep	.017	.024	.513	1	.474	1.017
Inf Obs	.002	.018	.017	1	.897	1.002
Self N	.008	.005	2.234	1	1.35	1.008
Self E	-.004	.006	.572	1	.450	.996
Self O	-.006	.005	1.236	1	.266	.994
Self A	-.001	.006	.052	1	.819	.999
Self C	.003	.006	.276	1	.599	1.003
Self Par	-.014	.028	.260	1	.610	.986
Self Szd	-.001	.023	.003	1	.959	1.003
Self Szt	.048	.026	3.290	1	.070	1.049
Self Ant	.033	.035	.886	1	.347	1.033
Self Bor	.005	.031	.022	1	.883	1.005
Self Hst	.050	.026	3.290	1	.070	1.049
Self Nar	-.036	.025	2.111	1	.146	.965
Self Avd	-.037	.026	1.987	1	.159	.964
Self Dep	-.025	.031	.664	1	.415	.975

Self Obs	.010	.021	.224	1	.636	1.010

Model Summary	χ^2	*df*	*p*	R^2
	81.740	33	< .001*	.084*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-9

Hierarchical Logistic Regression with Personality Variables Predicting Asthma via Informant Then Self Reports

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.631	.210	9.052	1	.003*	1.880
	Race	-.007	.005	1.817	1	1.78	.993
	IGender	-.297	.185	2.578	1	.108	.743
	Inf N	-.001	.006	.036	1	.850	.999
	Inf E	.001	.007	.202	1	.886	1.001
	Inf O	-.005	.007	.616	1	.432	.995
	Inf A	.003	.006	.226	1	.634	1.003

Inf C	.006	.006	.915	1	.339	1.006
Inf Par	.004	.031	.017	1	.895	1.004
Inf Szd	-.010	.028	.141	1	.707	.990
Inf Szt	-.038	.033	1.311	1	.252	.963
Inf Ant	.030	.042	.503	1	.478	1.030
Inf Bor	.050	.033	2.270	1	.132	1.051
Inf Hst	.038	.032	1.432	1	.232	1.039
Inf Nar	-.016	.029	.313	1	.576	.984
Inf Avd	-.010	.035	.078	1	.780	.990
Inf Dep	.006	.031	.033	1	.857	1.006
Inf Obs	-.034	.024	1.910	1	.167	.967
Self N	.005	.007	.584	1	.445	1.005
Self E	.012	.008	2.564	1	.109	1.013
Self O	.007	.007	1.180	1	.277	1.007
Self A	-.012	.008	2.605	1	.107	.998
Self C	< .001	.007	.004	1	.949	1.000
Self Par	.020	.037	.300	1	.584	1.021
Self Szd	.033	.030	1.256	1	.262	1.034
Self Szt	-.012	.036	.105	1	.745	.989
Self Ant	-.025	.046	.302	1	.583	.975
Self Bor	.089	.041	4.805	1	.028*	1.093
Self Hst	-.007	.035	.042	1	.837	.993

Self Nar	-.050	.032	2.400	1	.121	.951
Self Avd	.014	.034	.160	1	.689	1.014
Self Dep	-.023	.040	.343	1	.558	.977
Self Obs	.006	.028	.053	1	.818	1.006

Model Summary	χ^2	*df*	*p*	R^2
	57.536	33	.005*	.078*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-10

Hierarchical Logistic Regression with Personality Variables Predicting Diabetes via Informant Then Self Reports

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.378	.179	4.480	1	.034*	1.460
	Race	-.030	.004	46.606	1	< .001*	.971
	IGender	.384	.177	4.706	1	.030*	1.467
	Inf N	.003	.006	.381	1	.537	1.003

Inf E	.009	.006	2.068	1	.150	1.009
Inf O	.007	.006	1.415	1	.234	1.007
Inf A	< .001	.006	.001	1	.975	1.000
Inf C	-.013	.005	6.709	1	.010*	.987
Inf Par	.033	.027	1.441	1	.230	1.033
Inf Szd	-.019	.024	.023	1	.879	1.004
Inf Szt	-.019	.029	.411	1	.522	.982
Inf Ant	.030	.037	.666	1	.414	1.031
Inf Bor	.005	.031	.022	1	.881	1.005
Inf Hst	-.053	.030	3.127	1	.077	.949
Inf Nar	-.058	.027	.4600	1	.032*	.944
Inf Avd	.021	.030	.531	1	.466	1.022
Inf Dep	.022	.027	.653	1	.419	1.022
Inf Obs	.014	.021	.454	1	.500	1.014
Self N	.010	.006	2.501	1	.114	1.010
Self E	.004	.007	.246	1	.620	1.004
Self O	-.020	.006	10.173	1	.001*	.980
Self A	-.013	.007	3.525	1	.060	.987
Self C	.010	.007	2.214	1	.137	1.010
Self Par	-.013	.032	.176	1	.675	.987
Self Szd	.011	.026	.187	1	.666	1.011
Self Szt	-.007	.032	.046	1	.831	.993

Self Ant	.029	.041	.494	1	.482	1.030
Self Bor	.012	.037	.105	1	.746	1.012
Self Hst	-.044	.033	1.762	1	.184	.957
Self Nar	-.009	.029	.060	1	.807	.993
Self Avd	-.017	.031	.305	1	.581	.983
Self Dep	.025	.036	.495	1	.482	1.026
Self Obs	-.013	.024	.268	1	.605	.988

Model Summary	χ^2	*df*	*p*	R^2
	130.329	33	< .001*	.149*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-11

Hierarchical Logistic Regression with Normal Then Disordered Personality Variables Predicting Heart Disease

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	-.268	.196	1.871	1	.171	.765

Race	-.004	.005	.535	1	.464	.996
IGender	.098	.195	.251	1	.616	1.103
Self N	.010	.007	1.896	1	.169	1.010
Self E	.002	.007	.090	1	.764	1.002
Self O	-.006	.007	.872	1	.351	.994
Self A	-.001	.007	.033	1	.857	.999
Self C	.010	.008	1.804	1	.179	1.010
Inf N	-.004	.006	.384	1	.535	.996
Inf E	-.006	.006	1.034	1	.309	.994
Inf O	.009	.007	2.092	1	.148	1.009
Inf A	.004	.006	.414	1	.520	1.004
Inf C	-.001	.005	.046	1	.830	.999
Self Par	.015	.035	.179	1	.672	1.015
Self Szd	.048	.029	2.781	1	.095	1.049
Self Szt	-.007	.035	.037	1	.847	.993
Self Ant	.019	.045	.186	1	.666	1.019
Self Bor	.100	.039	6.644	1	.010*	1.105
Self Hst	.066	.033	3.888	1	.049*	1.068
Self Nar	-.031	.032	.974	1	.324	.969
Self Avd	-.046	.034	1.802	1	.180	.955
Self Dep	-.082	.041	4.011	1	.045*	.921
Self Obs	-.059	.028	4.483	1	.034*	.942

Inf Par	.032	.030	1.158	1	.282	1.033
Inf Szd	.032	.026	1.434	1	.231	1.032
Inf Szt	-.023	.031	.540	1	.462	.977
Inf Ant	-.011	.041	.076	1	.783	.989
Inf Bor	.035	.032	1.141	1	.286	1.035
Inf Hst	-.014	.031	.206	1	.650	.986
Inf Nar	< .001	.029	< .001	1	.995	1.000
Inf Avd	-.018	.033	.281	1	.596	.983
Inf Dep	.062	.029	4.536	1	.033*	1.064
Inf Obs	-.038	.024	2.505	1	.114	.963

Model Summary	χ^2	*df*	*p*	R^2
	59.136	33	.003*	.079*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-12

Hierarchical Logistic Regression with Normal Then Disordered Personality Variables Predicting Cancer

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.064	.194	.110	1	.741	1.066
	Race	.007	.005	2.022	1	.155	1.008
	IGender	.130`	.189	.477	1	.490	1.139
	Self N	-.001	.007	.039	1	.843	.999
	Self E	-.006	.007	.752	1	.386	.994
	Self O	.004	.006	.386	1	.534	1.004
	Self A	.009	.007	1.340	1	.247	1.009
	Self C	.006	.007	.667	1	.414	1.006
	Inf N	-.002	.006	.107	1	.743	.998
	Inf E	.007	.006	1.060	1	.303	1.007
	Inf O	.004	.006	.414	1	.520	1.004
	Inf A	-.005	.006	.686	1	.407	.995
	Inf C	.002	.006	.152	1	.696	1.002
	Self Par	.010	.038	.065	1	.798	1.010
	Self Szd	.037	.029	1.642	1	.200	1.038
	Self Szt	.021	.035	.356	1	.551	1.021
	Self Ant	.005	.046	.010	1	.921	1.005
	Self Bor	.091	.040	5.132	1	.023*	1.095
	Self Hst	-.006	.035	.033	1	.855	.994
	Self Nar	-.068	.033	4.283	1	.038*	.934

Self Avd	.023	.033	.471	1	.492	1.023
Self Dep	-.023	.041	.317	1	.574	.977
Self Obs	-.036	.027	1.796	1	.180	.965
Inf Par	.004	.032	.014	1	.904	1.004
Inf Szd	.008	.027	.096	1	.757	1.009
Inf Szt	-.065	.033	3.756	1	.053	.937
Inf Ant	-.063	.044	2.104	1	.147	.938
Inf Bor	-.043	.036	1.480	1	.224	.958
Inf Hst	.107	.032	11.467	1	.001*	1.113
Inf Nar	-.033	.030	1.227	1	.268	.968
Inf Avd	.050	.034	2.110	1	.146	1.051
Inf Dep	-.007	.033	.045	1	.833	.993
Inf Obs	-.002	.25	.010	1	.921	.998

Model Summary	χ^2	*df*	*p*	R^2
	50.258	33	.028*	.066*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-13

Hierarchical Logistic Regression with Normal Then Disordered Personality Variables Predicting Arthritis

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.807	1.55	27.156	1	< .001*	2.242
	Race	-.008	.004	4.293	1	.038*	.992
	IGender	.284	.146	3.820	1	.051	1.328
	Self N	.008	.005	2.234	1	.135	1.008
	Self E	-.004	.006	.572	1	.430	.996
	Self O	-.006	.005	1.236	1	.266	.994
	Self A	-.001	.006	.052	1	.819	.999
	Self C	-.001	.006	.276	1	.599	1.003
	Inf N	-.002	.005	.132	1	.716	1.003
	Inf E	.002	.005	.219	1	.640	1.002
	Inf O	-.004	.005	.722	1	.395	.996
	Inf A	-.004	.005	.559	1	.455	.996
	Inf C	.001	.004	.073	1	.786	1.001
	Self Par	-.014	.028	.260	1	.610	.986
	Self Szd	-.001	.023	.003	1	.959	.999
	Self Szt	.048	.026	3.290	1	.070	1.049
	Self Ant	.033	.035	.886	1	.347	1.033

Self Bor	.005	.031	.022	1	.883	1.005
Self Hst	.050	.026	3.754	1	.053	1.052
Self Nar	-.036	.025	2.111	1	.146	.965
Self Avd	-.037	.026	1.987	1	.159	.964
Self Dep	-.025	.031	.664	1	.415	.975
Self Obs	.010	.021	.224	1	.636	1.010
Inf Par	-.030	.024	1.553	1	.213	.971
Inf Szd	-.011	.021	.303	1	.582	.989
Inf Szt	.025	.024	1.056	1	.304	1.025
Inf Ant	-.017	.032	.295	1	.587	.983
Inf Bor	.047	.026	3.285	1	.070	1.048
Inf Hst	.018	.024	.556	1	.456	1.018
Inf Nar	-.033	.022	2.214	1	.137	.968
Inf Avd	-.032	.026	1.487	1	.223	.969
Inf Dep	.017	.024	.513	1	.474	1.017
Inf Obs	.002	.018	.017	1	.897	1.002

Model Summary	χ^2	*df*	*p*	R^2
	81.740	33	< .001*	.084*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial;

Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-14

Hierarchical Logistic Regression with Normal Then Disordered Personality Variables Predicting Asthma

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.631	.210	9.052	1	.003*	1.880
	Race	-.007	.005	1.817	1	1.78	.993
	IGender	-.297	.185	2.578	1	.108	.743
	Self N	.005	.007	.584	1	.445	1.005
	Self E	.012	.008	2.564	1	.109	1.013
	Self O	.007	.007	1.180	1	.277	1.007
	Self A	-.012	.008	2.605	1	.107	.988
	Self C	< .001	.007	.004	1	.949	1.000
	Inf N	-.001	.006	.036	1	.850	.999
	Inf E	.001	.007	.020	1	.886	1.001
	Inf O	-.005	.007	.616	1	.432	.995
	Inf A	.003	.006	.226	1	.634	1.003
	Inf C	.006	.006	.915	1	.339	1.006

Self Par	.020	.037	3.00	1	.584	1.021
Self Szd	.033	.030	1.256	1	.262	1.034
Self Szt	-.012	.036	.105	1	.745	.989
Self Ant	-.025	.046	.302	1	.583	.975
Self Bor	.089	.041	4.805	1	.028*	1.093
Self Hst	-.007	.035	.042	1	.837	.993
Self Nar	-.050	.032	2.400	1	.121	.951
Self Avd	.014	.034	.160	1	.689	1.014
Self Dep	-.023	.040	.343	1	.558	.997
Self Obs	.006	.028	.053	1	.818	1.006
Inf Par	.040	.031	.017	1	.895	1.004
Inf Szd	-.010	.028	.141	1	.707	.990
Inf Szt	-.038	.033	1.311	1	.252	.963
Inf Ant	.030	.042	.503	1	.478	1.030
Inf Bor	.050	.033	2.270	1	.132	1.051
Inf Hst	.038	.032	1.432	1	.232	1.039
Inf Nar	-.016	.029	.313	1	.576	.984
Inf Avd	-.010	.035	.078	1	.780	.990
Inf Dep	.006	.031	.033	1	.857	1.006
Inf Obs	-.034	.024	1.910	1	.167	.967

Model Summary	χ^2	*df*	*p*	R^2
	57.536	33	.005*	.078*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-15

Hierarchical Logistic Regression with Normal Then Disordered Personality Variables Predicting Diabetes

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.378	.179	4.480	1	.034*	1.460
	Race	-.030	.004	46.606	1	< .001*	.971
	IGender	.384	.177	4.706	1	.030*	1.467
	Self N	.010	.006	2.501	1	.114	1.010
	Self E	.004	.007	.246	1	.620	1.004
	Self O	-.020	.006	10.173	1	.001*	.980
	Self A	-.013	.007	3.525	1	.060	.987
	Self C	.010	.007	2.214	1	.137	1.010
	Inf N	.003	.006	.381	1	.537	1.003
	Inf E	.009	.006	2.068	1	.150	1.009

Inf O	.007	.006	1.415	1	.234	1.007
Inf A	< .001	.006	.001	1	.975	1.000
Inf C	-.013	.032	6.709	1	.010*	.987
Self Par	-.013	.032	.176	1	.675	.987
Self Szd	.011	.026	.187	1	.666	1.011
Self Szt	.007	.032	.046	1	.831	.993
Self Ant	.029	.041	.494	1	.482	1.030
Self Bor	.012	.037	.105	1	.746	1.012
Self Hst	-.044	.033	1.762	1	.184	.957
Self Nar	-.007	.029	.060	1	.807	.993
Self Avd	-.017	.031	.305	1	.581	.983
Self Dep	.025	.036	.495	1	.482	1.026
Self Obs	-.013	.024	.268	1	.605	.988
Inf Par	.033	.027	1.441	1	.230	1.033
Inf Szd	.004	.024	.023	1	.879	1.004
Inf Szt	-.019	.029	.411	1	.522	.982
Inf Ant	.030	.037	.666	1	.881	1.005
Inf Bor	.005	.031	.022	1	.881	1.005
Inf Hst	-.053	.030	3.127	1	.077	.949
Inf Nar	-.058	.027	4.600	1	.032*	.944
Inf Avd	.022	.030	.531	1	.466	1.022
Inf Dep	.022	.027	.653	1	.419	1.022

Inf Obs	.014	.021	.454	1	.500	1.014

Model Summary	χ^2	*df*	*p*	R^2
	130.329	33	< .001*	.149*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-16

Hierarchical Logistic Regression with Disordered Then Normal Personality Variables Predicting Heart Disease

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	-.268	.196	1.871	1	.171	.765
	Race	-.004	.005	.535	1	.464	.996
	IGender	.098	.195	.251	1	.616	1.103
	Self Par	.015	.035	.179	1	.672	1.015
	Self Szd	.048	.029	2.781	1	.095	1.049
	Self Szt	-.007	.035	.037	1	.847	.993
	Self Ant	.019	.045	.186	1	.666	1.019

Self Bor	.100	.039	6.644	1	.010*	1.105
Self Hst	.066	.033	3.888	1	.049*	1.068
Self Nar	-.031	.032	.974	1	.324	.969
Self Avd	-.046	.035	1.802	1	.180	.955
Self Dep	-.082	.041	4.011	1	.045*	.921
Self Obs	-.059	.028	4.482	1	.034*	.942
Inf Par	.032	.030	1.158	1	.282	1.033
Inf Szd	.032	.026	1.434	1	.231	1.032
Inf Szt	-.023	.031	.540	1	.462	.977
Inf Ant	-.011	.041	.076	1	.783	.989
Inf Bor	.035	.032	1.141	1	.286	1.035
Inf Hst	-.014	.031	.206	1	.650	.986
Inf Nar	< .001	.029	< .001	1	.995	1.000
Inf Avd	-.018	.033	.281	1	.596	.983
Inf Dep	.062	.029	4.536	1	.033*	1.064
Inf Obs	-.038	.024	2.505	1	.114	.963
Self N	.010	.007	1.896	1	.169	1.010
Self E	.002	.007	.090	1	.764	1.002
Self O	-.006	.007	.872	1	.351	.994
Self A	-.001	.007	.033	1	.857	.999
Self C	.010	.008	1.804	1	.179	1.010
Inf N	-.004	.006	.384	1	.535	.996

Inf E	-.006	.006	1.034	1	.309	.994
Inf O	.009	.007	2.092	1	.148	1.009
Inf A	.004	.006	.414	1	.520	1.004
Inf C	-.001	.005	.046	1	.830	.999

Model Summary	χ^2	*df*	*p*	R^2
	59.136	33	.003*	.079*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-17

Hierarchical Logistic Regression with Disordered Then Normal Personality Variables Predicting Cancer

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.064	.194	.110	1	.741	1.066
	Race	.007	.005	2.022	1	.155	1.008
	IGender	.130`	.189	.477	1	.490	1.139
	Self Par	.010	.038	.065	1	.798	1.010

Self Szd	.037	.029	1.642	1	.200	1.038
Self Szt	.021	.035	.356	1	.551	1.021
Self Ant	.005	.046	.010	1	.921	1.005
Self Bor	.091	.040	5.132	1	.023*	1.095
Self Hst	-.006	.035	.033	1	.855	.994
Self Nar	-.068	.033	4.283	1	.038*	.934
Self Avd	.023	.033	.471	1	.492	1.023
Self Dep	-.023	.041	.317	1	.574	.977
Self Obs	-.036	.027	1.796	1	.180	.965
Inf Par	.004	.032	.014	1	.904	1.004
Inf Szd	.008	.027	.096	1	.757	1.009
Inf Szt	-.065	.033	3.756	1	.053	.937
Inf Ant	-.063	.044	2.104	1	.147	.938
Inf Bor	-.043	.036	1.480	1	.224	.958
Inf Hst	.107	.032	11.467	1	.001*	1.113
Inf Nar	-.033	.030	1.227	1	.268	.968
Inf Avd	.050	.034	2.110	1	.146	1.051
Inf Dep	-.007	.033	.045	1	.833	.993
Inf Obs	-.002	.25	.010	1	.921	.998
Self N	-.001	.007	.039	1	.843	.999
Self E	-.006	.007	.752	1	.386	.994
Self O	.004	.006	.386	1	.534	1.004

Self A	.009	.007	1.340	1	.247	1.009
Self C	.006	.007	.667	1	.414	1.006
Inf N	-.002	.006	.107	1	.743	.998
Inf E	.007	.006	1.060	1	.303	1.007
Inf O	.004	.006	.414	1	.520	1.004
Inf A	-.005	.006	.686	1	.407	.995
Inf C	.002	.006	.152	1	.696	1.002

Model Summary	χ^2	*df*	*p*	R^2
	50.258	33	.028*	.066*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-18

Hierarchical Logistic Regression with Disordered Then Normal Personality Variables Predicting Arthritis

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.807	1.55	27.156	1	< .001*	2.242

Race	-.008	.004	4.293	1	.038*	.992
IGender	.284	.146	3.820	1	.051	1.328
Self Par	-.014	.028	.260	1	.610	.986
Self Szd	-.001	.023	.003	1	.959	.999
Self Szt	.048	.026	3.290	1	.070	1.049
Self Ant	.033	.035	.886	1	.347	1.033
Self Bor	.005	.031	.022	1	.883	1.005
Self Hst	.050	.026	3.754	1	.053	1.052
Self Nar	-.036	.025	2.111	1	.146	.965
Self Avd	-.037	.026	1.987	1	.159	.964
Self Dep	-.025	.031	.664	1	.415	.975
Self Obs	.010	.021	.224	1	.636	1.010
Inf Par	-.030	.024	1.553	1	.213	.971
Inf Szd	-.011	.021	.303	1	.582	.989
Inf Szt	.025	.024	1.056	1	.304	1.025
Inf Ant	-.017	.032	.295	1	.587	.983
Inf Bor	.047	.026	3.285	1	.070	1.048
Inf Hst	.018	.024	.556	1	.456	1.018
Inf Nar	-.033	.022	2.214	1	.137	.968
Inf Avd	-.032	.026	1.487	1	.223	.969
Inf Dep	.017	.024	.513	1	.474	1.017
Inf Obs	.002	.018	.017	1	.897	1.002

Self N	.008	.005	2.234	1	.135	1.008
Self E	-.004	.006	.572	1	.450	.996
Self O	-.006	.005	1.236	1	.266	.994
Self A	-.001	.006	.052	1	.819	.999
Self C	.003	.006	.276	1	.599	1.003
Inf N	-.002	.005	.132	1	.716	.998
Inf E	.002	.005	.219	1	.640	1.002
Inf O	-.004	.005	.722	1	.395	.996
Inf A	-.004	.005	.559	1	.455	.996
Inf C	.001	.004	.073	1	.786	1.001

Model Summary	χ^2	*df*	*p*	R^2
	81.740	33	< .001*	.084*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-19

Hierarchical Logistic Regression with Disordered Then Normal Personality Variables Predicting Asthma

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.631	.210	9.052	1	.003*	1.880
	Race	-.007	.005	1.817	1	1.78	.993
	IGender	-.297	.185	2.578	1	.108	.743
	Self Par	.020	.037	3.00	1	.584	1.021
	Self Szd	.033	.030	1.256	1	.262	1.034
	Self Szt	-.012	.036	.105	1	.745	.989
	Self Ant	-.025	.046	.302	1	.583	.975
	Self Bor	.089	.041	4.805	1	.028*	1.093
	Self Hst	-.007	.035	.042	1	.837	.993
	Self Nar	-.050	.032	2.400	1	.121	.951
	Self Avd	.014	.034	.160	1	.689	1.014
	Self Dep	-.023	.040	.343	1	.558	.997
	Self Obs	.006	.028	.053	1	.818	1.006
	Inf Par	.040	.031	.017	1	.895	1.004
	Inf Szd	-.010	.028	.141	1	.707	.990
	Inf Szt	-.038	.033	1.311	1	.252	.963
	Inf Ant	.030	.042	.503	1	.478	1.030
	Inf Bor	.050	.033	2.270	1	.132	1.051
	Inf Hst	.038	.032	1.432	1	.232	1.039
	Inf Nar	-.016	.029	.313	1	.576	.984

Inf Avd	-.010	.035	.078	1	.780	.990
Inf Dep	.006	.031	.033	1	.857	1.006
Inf Obs	-.034	.024	1.910	1	.167	.967
Self N	.005	.007	.584	1	.445	1.005
Self E	.012	.008	2.564	1	.109	1.013
Self O	.007	.007	1.180	1	.277	1.007
Self A	-.012	.008	2.605	1	.107	.988
Self C	< .001	.007	.004	1	.949	1.000
Inf N	-.001	.006	.036	1	.850	.999
Inf E	.001	.007	.020	1	.886	1.001
Inf O	-.005	.007	.616	1	.432	.995
Inf A	.003	.006	.226	1	.634	1.003
Inf C	.006	.006	.915	1	.339	1.006

Model Summary	χ^2	*df*	*p*	R^2
	57.536	33	.005*	.078*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

Table B-20

Hierarchical Logistic Regression with Disordered Then Normal Personality Variables Predicting Diabetes

Step 3	Predictor	β	SE β	Wald's χ^2	*df*	*p*	e^{β} (odds ratio)
	Gender	.378	.179	4.480	1	.034*	1.460
	Race	-.030	.004	46.606	1	< .001*	.971
	IGender	.384	.177	4.706	1	.030*	1.467
	Self Par	-.013	.032	.176	1	.675	.987
	Self Szd	.011	.026	.187	1	.666	1.011
	Self Szt	.007	.032	.046	1	.831	.993
	Self Ant	.029	.041	.494	1	.482	1.030
	Self Bor	.012	.037	.105	1	.746	1.012
	Self Hst	-.044	.033	1.762	1	.184	.957
	Self Nar	-.007	.029	.060	1	.807	.993
	Self Avd	-.017	.031	.305	1	.581	.983
	Self Dep	.025	.036	.495	1	.482	1.026
	Self Obs	-.013	.024	.268	1	.605	.988
	Inf Par	.033	.027	1.441	1	.230	1.033
	Inf Szd	.004	.024	.023	1	.879	1.004
	Inf Szt	-.019	.029	.411	1	.522	.982
	Inf Ant	.030	.037	.666	1	.881	1.005

Inf Bor	.005	.031	.022	1	.881	1.005
Inf Hst	-.053	.030	3.127	1	.077	.949
Inf Nar	-.058	.027	4.600	1	.032*	.944
Inf Avd	.022	.030	.531	1	.466	1.022
Inf Dep	.022	.027	.653	1	.419	1.022
Inf Obs	.014	.021	.454	1	.500	1.014
Self N	.010	.006	2.501	1	.114	1.010
Self E	.004	.007	.246	1	.620	1.004
Self O	-.020	.006	10.173	1	.001*	.980
Self A	-.013	.007	3.525	1	.060	.987
Self C	.010	.007	2.214	1	.137	1.010
Inf N	.003	.006	.381	1	.537	1.003
Inf E	.009	.006	2.068	1	.150	1.009
Inf O	.007	.006	1.415	1	.234	1.007
Inf A	< .001	.006	.001	1	.975	1.000
Inf C	-.013	.005	6.709	1	.010*	.987

Model Summary	χ^2	*df*	*p*	R^2
	130.329	33	< .001*	.149*

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial;

Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .05$.

APPENDIX C

Table C-1

Self Then Informant Reports Predicting Self-reported Subjective Health

Predictor	*B*	*SE B*	*β*	*p*
Gender	-.048	.057	-.023	.400
Race	.016	.001	.273	< .001*
IGender	-.092	.055	-.041	.096
Self N	-.009	.002	-.183	< .001*
Self E	.001	.002	.019	.609
Self O	.004	.002	.072	.028
Self A	.003	.002	.045	.150
Self C	.001	.002	.022	.541
Self Par	-.002	.011	-.008	.834
Self Szd	-.019	.009	-.065	.033
Self Szt	-.031	.010	-.113	.003*
Self Ant	.016	.014	.038	.235
Self Bor	-.034	.012	-.110	.005*
Self Hst	-.010	.010	-.036	.309
Self Nar	.025	.009	.098	.007
Self Avd	.020	.010	.073	.048
Self Dep	-.001	.012	-.004	.908

Self Obs	.016	.008	.067	.043
Inf N	-.003	.002	-.065	.132
Inf E	-.003	.002	-.057	.134
Inf O	< .001	.002	.003	.936
Inf A	-.001	.002	-.028	.484
Inf C	.002	.002	.047	.216
Inf Par	-.004	.009	-.017	.691
Inf Szd	-.013	.008	-.054	.087
Inf Szt	-.012	.009	-.052	.198
Inf Ant	.014	.012	.047	.241
Inf Bor	-.019	.010	-.089	.050
Inf Hst	.020	.009	.091	.028
Inf Nar	.007	.008	.040	.393
Inf Avd	.016	.010	.065	.100
Inf Dep	-.031	.009	-.123	.001*
Inf Obs	< .001	.007	.001	.982

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .00625$

Table C-2

Informant Then Self Reports Predicting Self-reported Subjective Health

Predictor	*B*	*SE B*	*B*	*p*
Gender	-.048	.057	-.023	.400
Race	.016	.001	.273	< .001*
IGender	-.092	.055	-.041	.096
Inf N	-.003	.002	-.065	.132
Inf E	-.003	.002	-.057	.134
Inf O	< .001	.002	.003	.936
Inf A	-.001	.002	-.028	.484
Inf C	.002	.002	.047	.216
Inf Par	-.004	.009	-.017	.691
Inf Szd	-.013	.008	-.054	.087
Inf Szt	-.012	.009	-.052	.198
Inf Ant	.014	.012	.047	.241
Inf Bor	-.019	.010	-.089	.050
Inf Hst	.020	.009	.091	.028
Inf Nar	.007	.008	.040	.393
Inf Avd	.016	.010	.065	.100
Inf Dep	-.031	.009	-.123	.001*
Inf Obs	< .001	.007	.001	.982
Self N	-.009	.002	-.183	< .001*

Self E	.001	.002	.019	.609
Self O	.004	.002	.072	.028
Self A	.003	.002	.045	.150
Self C	.001	.002	.022	.541
Self Par	-.002	.011	-.008	.834
Self Szd	-.019	.009	-.065	.033
Self Szt	-.031	.010	-.113	.003*
Self Ant	.016	.014	.038	.235
Self Bor	-.034	.012	-.110	.005*
Self Hst	-.010	.010	-.036	.309
Self Nar	.025	.009	.098	.007
Self Avd	.020	.010	.073	.048
Self Dep	-.001	.012	-.004	.908
Self Obs	.016	.008	.067	.043

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .00625$

Table C-3

Normal Then Disordered Personality Predicting Self-reported Subjective Health

Predictor	*B*	*SE B*	*B*	*p*
Gender	-.048	.057	-.023	.400
Race	.016	.001	.273	< .001*
IGender	-.092	.055	-.041	.096
Self N	-.009	.002	-.183	< .001*
Self E	.001	.002	.019	.609
Self O	.004	.002	.072	.028
Self A	.003	.002	.045	.150
Self C	.001	.002	.022	.541
Inf N	-.003	.002	-.065	.132
Inf E	-.003	.002	-.057	.134
Inf O	< .001	.002	.003	.936
Inf A	-.001	.002	-.028	.484
Inf C	.002	.002	.047	.216
Self Par	-.002	.011	-.008	.834
Self Szd	-.019	.009	-.065	.033
Self Szt	-.031	.010	-.113	.003*
Self Ant	.016	.014	.038	.235
Self Bor	-.034	.012	-.110	.005*
Self Hst	-.010	.010	-.036	.309

Self Nar	.025	.009	.098	.007
Self Avd	.020	.010	.073	.048
Self Dep	-.001	.012	-.004	.908
Self Obs	.016	.008	.067	.043
Inf Par	-.004	.009	-.017	.691
Inf Szd	-.013	.008	-.054	.087
Inf Szt	-.012	.009	-.052	.198
Inf Ant	.014	.012	.047	.241
Inf Bor	-.019	.010	-.089	.050
Inf Hst	.020	.009	.091	.028
Inf Nar	.007	.008	.040	.393
Inf Avd	.016	.010	.065	.100
Inf Dep	-.031	.009	-.123	.001*
Inf Obs	< .001	.007	.001	.982

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .00625$

Table C-4

Disordered Then Normal Personality Predicting Self-reported Physical Health

Predictor	*B*	*SE B*	*B*	*p*
Gender	-.048	.057	-.023	.400
Race	.016	.001	.273	< .001*
IGender	-.092	.055	-.041	.096
Self Par	-.002	.011	-.008	.834
Self Szd	-.019	.009	-.065	.033
Self Szt	-.031	.010	-.113	.003*
Self Ant	.016	.014	.038	.235
Self Bor	-.034	.012	-.110	.005*
Self Hst	-.010	.010	-.036	.309
Self Nar	.025	.009	.098	.007
Self Avd	.020	.010	.073	.048
Self Dep	-.001	.012	-.004	.908
Self Obs	.016	.008	.067	.043
Inf Par	-.004	.009	-.017	.691
Inf Szd	-.013	.008	-.054	.087
Inf Szt	-.012	.009	-.052	.198
Inf Ant	.014	.012	.047	.241
Inf Bor	-.019	.010	-.089	.050
Inf Hst	.020	.009	.091	.028

Inf Nar	.007	.008	.040	.393
Inf Avd	.016	.010	.065	.100
Inf Dep	-.031	.009	-.123	.001*
Inf Obs	< .001	.007	.001	.982
Self N	-.009	.002	-.183	< .001*
Self E	.001	.002	.019	.609
Self O	.004	.002	.072	.028
Self A	.003	.002	.045	.150
Self C	.001	.002	.022	.541
Inf N	-.003	.002	-.065	.132
Inf E	-.003	.002	-.057	.134
Inf O	< .001	.002	.003	.936
Inf A	-.001	.002	-.028	.484
Inf C	.002	.002	.047	.216

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .00625$

Table C-5

Self Then Informant Reports Predicting Informant-reported Subjective Health

Predictor	*B*	*SE B*	*B*	*p*
Gender	-.127	.064	-.059	.047
Race	.013	.002	.220	< .001*
IGender	-.187	.063	-.080	.003*
Self N	-.006	.002	-.119	.007
Self E	-.002	.002	-.033	.430
Self O	.002	.002	.027	.449
Self A	-.001	.002	-.018	.607
Self C	.002	.002	.032	.406
Self Par	.005	.012	.017	.678
Self Szd	-.009	.010	-.030	.384
Self Szt	-.019	.012	-.067	.106
Self Ant	-.012	.015	-.028	.430
Self Bor	-.014	.013	-.048	.279
Self Hst	.004	.012	.013	.748
Self Nar	.018	.011	.069	.087
Self Avd	.012	.011	.044	.292
Self Dep	.021	.013	.061	.112
Self Obs	-.001	.009	-.005	.884
Inf N	-.005	.002	-.126	.007

Inf E	.001	.002	.028	.513
Inf O	.001	.002	.023	.528
Inf A	.004	.002	.088	.044
Inf C	.004	.002	.095	.022
Inf Par	.013	.010	.059	.211
Inf Szd	-.010	.009	-.038	.278
Inf Szt	-.011	.011	-.046	.292
Inf Ant	-.001	.013	-.004	.924
Inf Bor	-.019	.011	-.086	.085
Inf Hst	-.002	.010	-.008	.859
Inf Nar	.027	.009	.143	.004*
Inf Avd	.011	.011	.044	.301
Inf Dep	-.042	.010	-.161	< .001*
Inf Obs	-.002	.008	-.009	.809

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .00625$

Table C-6

Informant Then Self Reports Predicting Informant-reported Physical Health

Predictor	*B*	*SE B*	*B*	*p*
Gender	-.127	.064	-.059	.047
Race	.013	.002	.220	< .001*
IGender	-.187	.063	-.080	.003*
Inf N	-.005	.002	-.126	.007
Inf E	.001	.002	.028	.513
Inf O	.001	.002	.023	.528
Inf A	.004	.002	.088	.044
Inf C	.004	.002	.095	.022
Inf Par	.013	.010	.059	.211
Inf Szd	-.010	.009	-.038	.278
Inf Szt	-.011	.011	-.046	.292
Inf Ant	-.001	.013	-.004	.924
Inf Bor	-.019	.011	-.086	.085
Inf Hst	-.002	.010	-.008	.859
Inf Nar	.027	.009	.143	.004*
Inf Avd	.011	.011	.044	.301
Inf Dep	-.042	.010	-.161	< .001*
Inf Obs	-.002	.008	-.009	.809
Self N	-.006	.002	-.119	.007

Self E	-.002	.002	-.033	.430
Self O	.002	.002	.027	.449
Self A	-.001	.002	-.018	.607
Self C	.002	.002	.032	.406
Self Par	.005	.012	.017	.678
Self Szd	-.009	.010	-.030	.384
Self Szt	-.019	.012	-.067	.106
Self Ant	-.012	.015	-.028	.430
Self Bor	-.014	.013	-.048	.279
Self Hst	.004	.012	.013	.748
Self Nar	.018	.011	.069	.087
Self Avd	.012	.011	.044	.292
Self Dep	.021	.013	.061	.112
Self Obs	-.001	.009	-.005	.884

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .00625$

Table C-7

Normal Then Disordered Personality Predicting Informant-reported Physical Health

Predictor	*B*	*SE B*	*B*	*p*
Gender	-.127	.064	-.059	.047
Race	.013	.002	.220	< .001*
IGender	-.187	.063	-.080	.003*
Self N	-.006	.002	-.119	.007
Self E	-.002	.002	-.033	.430
Self O	.002	.002	.027	.449
Self A	-.001	.002	-.018	.607
Self C	.002	.002	.032	.406
Inf N	-.005	.002	-.126	.007
Inf E	.001	.002	.028	.513
Inf O	.001	.002	.023	.528
Inf A	.004	.002	.088	.044
Inf C	.004	.002	.095	.022
Self Par	.005	.012	.017	.678
Self Szd	-.009	.010	-.030	.384
Self Szt	-.019	.012	-.067	.106
Self Ant	-.012	.015	-.028	.430
Self Bor	-.014	.013	-.048	.279
Self Hst	.004	.012	.013	.748

Self Nar	.018	.011	.069	.087
Self Avd	.012	.011	.044	.292
Self Dep	.021	.013	.061	.112
Self Obs	-.001	.009	-.005	.884
Inf Par	.013	.010	.059	.211
Inf Szd	-.010	.009	-.038	.278
Inf Szt	-.011	.011	-.046	.292
Inf Ant	-.001	.013	-.004	.924
Inf Bor	-.019	.011	-.086	.085
Inf Hst	-.002	.010	-.008	.859
Inf Nar	.027	.009	.143	.004*
Inf Avd	.011	.011	.044	.301
Inf Dep	-.042	.010	-.161	< .001*
Inf Obs	-.002	.008	-.009	.809

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .00625$

Table C-8

Disordered Then Normal Personality Predicting Informant-reported Physical Health

Predictor	*B*	*SE B*	*B*	*p*
Gender	-.127	.064	-.059	.047
Race	.013	.002	.220	< .001*
IGender	-.187	.063	-.080	.003*
Self Par	.005	.012	.017	.678
Self Szd	-.009	.010	-.030	.384
Self Szt	-.019	.012	-.067	.106
Self Ant	-.012	.015	-.028	.430
Self Bor	-.014	.013	-.048	.279
Self Hst	.004	.012	.013	.748
Self Nar	.018	.011	.069	.087
Self Avd	.012	.011	.044	.292
Self Dep	.021	.013	.061	.112
Self Obs	-.001	.009	-.005	.884
Inf Par	.013	.010	.059	.211
Inf Szd	-.010	.009	-.038	.278
Inf Szt	-.011	.011	-.046	.292
Inf Ant	-.001	.013	-.004	.924
Inf Bor	-.019	.011	-.086	.085
Inf Hst	-.002	.010	-.008	.859

Inf Nar	.027	.009	.143	.004*
Inf Avd	.011	.011	.044	.301
Inf Dep	-.042	.010	-.161	< .001*
Inf Obs	-.002	.008	-.009	.809
Self N	-.006	.002	-.119	.007
Self E	-.002	.002	-.033	.430
Self O	.002	.002	.027	.449
Self A	-.001	.002	-.018	.607
Self C	.002	.002	.032	.406
Inf N	-.005	.002	-.126	.007
Inf E	.001	.002	.028	.513
Inf O	.001	.002	.023	.528
Inf A	.004	.002	.088	.044
Inf C	.004	.002	.095	.022

Note. IGender = Informant gender; Self = Self-reported; Inf = Informant-reported; N = Neuroticism; E = Extraversion; O = Openness to experience; A = Agreeableness; C = Conscientiousness; Par = Paranoid; Szd = Schizoid; Szt = Schizotypal; Ant = Antisocial; Bor = Borderline; Hst = Histrionic; Nar = Narcissistic; Avd = Avoidant; Dep = Dependent; Obs = Obsessive-compulsive.

* $p < .00625$